development communication report

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Telemedicine: Health Care for Isolated Areas

Telemedicine, the systematic use of telecommunications in the delivery of health care, is one approach to solving the shortage of highly trained health care workers in rural areas. Telemedicine has received particular attention in recent years as a series of experiments have demonstrated ways in which communications can be used to extend, expedite, or improve health care. Most of the experiments have been designed for specialized institutional or urban environments, but one series of experiments in rural Alaska may provide an example of a way in which telemedicine can be used to improve the delivery of health care to isolated populations.

The following article by Dennis Foote of the Stanford Institute for Communication Research discusses the results of the Alaskan experiments and their implications for planning telemedicine systems in other areas. Dr. Foote and Dr. Heather Hudson, who also contributed to the preparation of this article, worked on the evaluations of the Alaskan experiments.

The problems faced by Alaska are similar to those faced by many developing countries. Alaska is huge and sparsely populated. Most of its 350,000 people and the majority of its health care services are concentrated in a few urban areas. Small Eskimo, Indian and Aleut villages are scattered throughout the State. Such villages typically have populations of 25 to 500 people. Few of these communities have telephone service, electricity, running water or sewage systems. Most can be reached only by plane or by boat during the summer.

The responsibility for the health care of Alaskan natives lies with the Indian Health Service (IHS), a part of the U.S. Public Health Service. IHS has for years maintained a system of small field hospitals located around the state, with a referral hospital in Anchorage, the state's largest city. However, villages are often cut off from the outside world and a system of primary local primary care had to be established. To provide this care, IHS trained native "health aides" who would work in their villages but be in direct communication with a field hospital.

Health aides are nominated for training by their communities and receive a maximum of 16 weeks training from the Public Health Service. This training is divided into several phases and is conducted in the field hospital and on-the-job. After a period of initial training, the health aide returns to his or her village with certain basic tools — a drug kit, instruments, a diagnostic reference manual, and a communication link to the nearest field hospital.

Doctors at the field hospital contact the village health aides each day for a scheduled consultation known as "doctor call". Contact is made using a two-way radio that allows the doctor and health aide to talk to each other, but not at the same time. All health aides in the same area use the same frequency and can hear the consultation between the doctor and the other health aides.

During these consultations, the health aide reports on the symptoms of the patients that he or she has seen that day and describes the management that has been given so far. The doctor asks for additional information, confirms or revises diagnoses or management plans, and gives instructions for additional care. Patients whose illnesses cannot be handled by the health aide are evacuated by plane to the nearest field hospital or clinic. If health aides need to contact the doctor outside of scheduled consultations, they can use an emergency signal.

The usual communication link for the program was a high-frequency (HF) radio, similar to the familiar airplane or taxicab radio. However, severe electrical interference, infrequent maintenance, long distances, and mountainous terrain cause HF radio communication to be unreliable in many parts of Alaska. In some places, HF communication problems were so acute that the functioning of the entire health care system was threatened.

ATS-1 Audio Experiments

In 1971, the Indian Health Service and the Lister Hill National Center for Biomedical Communication joined with the Na-

(Continued on page 2)

Tanzanian Campaigns Achieve Popular Participation

The United Republic of Tanzania has pioneered in developing methods to involve rural audiences in learning and action campaigns. In the following article, Clearinghouse Director Jock Gunter, looks at the ways in which the campaigns have developed to serve Tanzania's evolving philosophy of development.

In the "Arusha Declaration" of 1967, President Julius Nyerere re-examined existing policies favoring industrialization and British-style formal education. Some months later, the President's policy paper, *Education for Self-Reliance*, called for an educational system which could rapidly equip Tanzania's masses to develop a country that was — and would remain — rural and non-industrial. To meet this challenge, the government concentrated on developing an adult education field staff at the grass-roots level and named 1970 as Adult Education Year.

(Continued on page 4)

What's in a name . . .

The Information Center on Instructional Technology has changed both its name and its focus. As the Clearinghouse on Development Communication, we will be concerned with the role that all types of communication activities can play in solving development problems. *Development Communication Report* (formerly *ICIT Report*) will present interviews and articles on the ways in which communication has been and can be used in agriculture, health, nutrition, family planning, and other development areas. As always, we invite you to share your comments and ideas with our readers.

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Telemedicine (Continued)

tional Aeronautics and Space Administration in an experiment using satellite radio to provide reliable, inexpensive communication to the remote health aides. The Applications Technology Satellite-1 (ATS-1) was used to provide voice-only communication between one of the field hospitals and 17 villages in that district. The ATS-1 uses small earth stations that are inexpensive, simple and rugged. Modified taxicab radios, powered by automobile batteries, transmit and receive through a ten-foot diameter metal mesh antenna.

The introduction of reliable communication by satellite produced some dramatic changes in the health care system. • The number of contacts between doctors and health aides increased more than 400% in the first year of the experiment and continued to increase in the second year. • Many more patients were treated with the benefit of a doctor's advice than had been the case before the satellite was made available. • Health aides report that patients are more conscientious about following treatment plans and are more willing to come to health aides for care now that there is regular access to a doctor. • Health aides also benefited from incidental learning by listening to conversations between the doctor and other aides. • The telemedicine consultations led to improved capacity to handle emergency cases and to solve administrative and supply requests.

ATS-6 Video Experiments

After several years experience with the voice-only ATS-1 satellite, Alaska began a second experiment in satellite communication for health care. In 1974 a much more sophisticated and powerful satellite, ATS-6, was used in a one-year experiment to provide television communication between two remote clinics, a field hospital, and the referral hospital.

The two clinics selected for the ATS-6 demonstration were in larger than average communities (500 to 700 people), were staffed by more highly trained personnel (nurses and a physician's assistant), and had substantially more facilities and equipment (including X-ray equipment in one clinic) than were available to the health aides. These clinics also provided intermediate level care to native patients from surrounding villages.

For the experiment, the clinics were outfitted with television sending and receiving equipment, and with some additional diagnostic equipment, such as transmitting electrocardiographs and electronic stethophones. The video system was available for one hour three times per week and was used for consultations between the remote clinics and doctors at the field hospital, and for consultations between doctors at the field hospital and specialists at the referral center.

The ATS-6 experiment demonstrated that useful consultations for practically any medical problem can be conducted over the video channel, but that cases where the visual information is absolutely critical to the diagnosis are rare. The vast majority of the cases could be handled (albeit occasionally with some inconvenience) over an audio-only channel. The video cases, which were slightly more complex than the radio cases, took an average of about 12 to 15 minutes to discuss, as compared with three minutes for the radio cases. Health care providers involved in the satellite video experiment generally felt that the video consultations improved the capabilities of the health care system, but questioned whether the improvement was worth the additional cost or inconvenience. They placed much stronger emphasis on the implementation of reliable audio channels, which they considered absolutely essential to the delivery of health care in rural Alaska.

Health Information System

At the same time that the ATS-6 experiment was implemented, a centralized medical record system, the Health Information System (HIS), was created to help overcome a severe problem in Alaska — patients often go to many different places for health care, with the result that their medical records are fragmented and scattered. The patients themselves usually do not know or cannot accurately describe the diagnosis or treatment that has resulted from visits to other health care providers and it is difficult to obtain medical records from all of the places they have visited.

The Health Information System is a centralized, computer-based system of problem-oriented records. Health care providers record each outpatient encounter on a special form and send a carbon copy to a central facility which adds the record to the individual patient's file stored in the computer system. Providers receive bi-weekly printouts of the records of the patients in their area.

Three main features of HIS are important. • All of the providers in the program use a standard format for record-keeping, making it easier for providers to organize their own records and to use records made by others. • All of the patient records are centralized so that a full patient record will be available to all of the providers in the system. • Medical information in a patient's record is organized by medical problems rather than by visits to the doctor. Medical care providers found this type of organization to be much easier to use than a listing that summarized the patient's visits by date.

Conclusions

Experiments usually are short-term and may create a dependence on a service that will be withdrawn. In Alaska, the experimentation with satellite communication in health care has been closely tied with planning operational services to the rural areas. The experiment demonstrated that two-way communication is vital to the support of rural health care workers and that satellites can reliably and inexpensively provide such communication. These results have influenced the design of and probably have been a catalyst for the adoption of an operational system that will continue to provide the services offered by the experiment. A satellite-based telephone communication network for rural villages is now being implemented. The State of Alaska has purchased one hundred small ground stations for use with a commercial satellite. The long lines supplier in the state is installing and operating the stations, which will provide at least one public telephone circuit and one medical communication circuit. The circuit for medical communication will incorporate some of the important features of the experiments: "Doctor call" type services and the Health Information System will continue; the circuit will be "party-line" so that health aides can continue to learn by listening to other consultations; and, the system can be used for statewide health education broadcasts to the villages.

Several general conclusions about the application of telemedicine in rural areas and the use of satellite communication can be drawn from these experiments.

Telemedicine

- Telemedicine, whether by audio or video, can provide useful consultations for virtually any type of medical problem. Visual information is "absolutely critical" only in a very small proportion of cases. Video consultations are convenient for some applications, such as showing X-rays, but generally take longer, are more cumbersome, and cost considerably more than audio-only consultations.
- For all practical purposes, what can be done for patients in a telemedicine system in rural areas is limited by the facilities or skills available at the remote site, not by what can be accomplished over a communication channel.
- Some sort of emergency contact system for signaling the doctor is valuable; otherwise, scheduled contacts are more convenient for the doctor.
- Health care providers of all levels of skill can participate in useful consultations over both audio and video systems. Extensive medical training is *not* a requirement for effective communication. Rural health aides with little formal education and no more than 16 weeks of

medical training provided high quality care with the assistance of the telemedicine system.

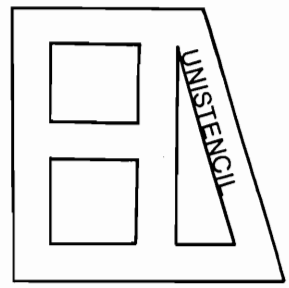
- By having the community recruit its own health aide, problems of community acceptance and high staff turnover were greatly reduced.
- Health care providers found the Health Information System with its standardized record format and problem-oriented summaries of patients' medical histories to be a valuable part of the telemedicine system.
- It is important that telemedicine be integrated into an organized system of rural health care. Telemedicine cannot function productively unless its service is reliably available and is backed up by other elements of the system, such as the supply of medicines to rural health care centers, training for health care workers, and equipment maintenance.
- The telemedicine system must be supportive of rural health care, both in intent and in perception by the rural workers; a system the staff perceives as being used primarily for supervision and monitoring rather than as the source of a useful service is likely to be ignored or sabotaged.
- The scale of the activity must be such that the people involved feel personally responsible for the care that is provided. The remote health care provider should be responsible for a small enough area so that he or she can know most of the individuals and their problems, the physician consultant should be personally acquainted with all of the health care providers in his or her district and with many of the patients. This sense of personal responsibility is more important in a telemedicine system than in face-to-face care because communication is more difficult between levels of care providers, and across the socio-cultural boundaries that often coincide with them. When the verbal information the consulting doctor receives is ambiguous or inarticulate, personal familiarity with the care provider and the conditions in the community will help the doctor to interpret the information.

Satellite Communication

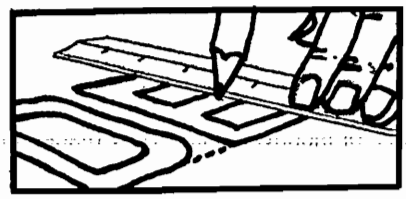
- Reliable communication can be provided via satellite. The equipment is capable of functioning under extreme environmental conditions and, because satellite technology need not be complex at the village level, it can be used by people who are not technical experts.
- Satellites can provide immediate service in rural areas. There is no need to wait for the terrestrial infrastructure of land lines and microwave to reach the rural areas from the cities.
- In many cases, satellite communication is a much cheaper way of extending communication services to rural areas than is expanding the terrestrial system.■

Cheap & Easy

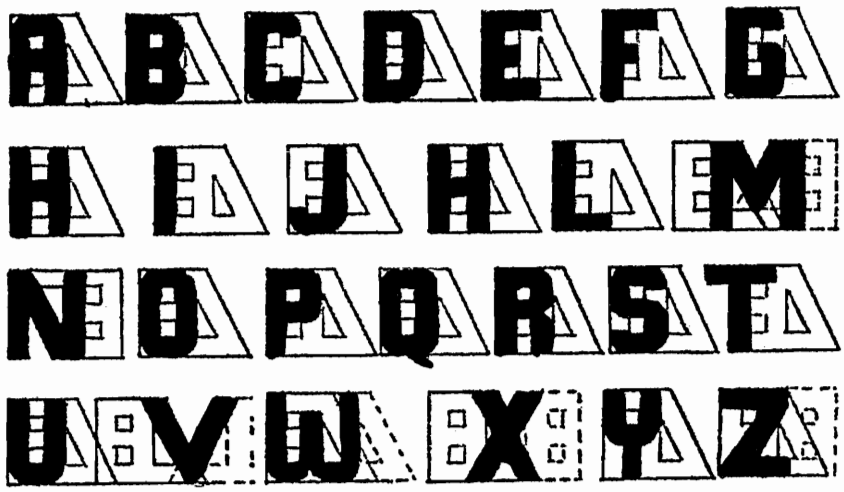
The Unistencil is one of the simplest lettering devices for making block letters. The stencil can be made from cardboard or x-ray film.



UNISTENCIL



Draw the necessary lines or curves to complete the letters. Finish off the lettering with pen or brush.



Rosemary and I are both working in Canada — she in Kitchener and I in Toronto. Our mail is forwarded and I will continue to answer your letters.

Lindy Layer

Lindy Layer & Rosemary Nicholls

U.P.A. Box 1221, Cocoa Beach, Fla. 32931

Additional information on the Alaskan Experiments and on telemedicine in general can be obtained from a number of sources. Evaluations of the ATS-1 and ATS-6 experiments were conducted by the Institute for Communication Research, Stanford University with the Stanford Medical School. The final report of the ATS-1 evaluation, *Health Care and Satellite Radio Communication in Village Alaska* (Kreimer, O., et al., Stanford, California: Institute for Communication Research, Stanford University 1974) is out-of-print but photocopies can be purchased from the National Technical Information Service (NTIS) 5285 Port Royal Road, Springfield, Virginia. "Medical Communication in Alaska by Satellite" (Hudson, H.E. and Parker, E.B., *New England Journal of Medicine*, 289:1351-1356, December 1973) is a good summary of the initial ATS-1 research findings. Copies of *Telemedicine in Alaska: The ATS-6 Satellite Biomedical Demonstration* (Foote, D., et al., Stanford, California: Institute for Communication Research, Stanford University, 1976) can be obtained by writing to Dr. Edwin B. Parker, Institute for Communication Research, Stanford University, Stanford, California 94305.

Two good general works on telemedicine are: *Telemedicine: Explorations in the Use of Telecommunications in Health Care* (Bashshur, R.L., et al., Springfield, Illinois: Charles C. Thomas, 1975); and, *An Introduction to Telemedicine: Interactive Television for Delivery of Health Services* (Park, B., New York: The Alternate Media Center at New York University, June 1974). Persons wishing to contact Dennis Foote or Heather Hudson should write to them care of the Clearinghouse.

Tanzania (Continued)

By the beginning of 1970, multi-media methods had been used by institutions in two different regions of the country. The Cooperative Education Center at Moshi began teaching organizational skills to its members via radio study groups and correspondence "study letters" in 1967. These methods were based to a large extent on the study circles used by labor and cooperative education programs in Sweden. Within one year, some 400 study groups were participating in one or more of the courses offered at Moshi.

The Institute of Adult Education (then part of the University College of Dar es Salaam) also began a multi-media program in 1967. Civics, English, and agriculture were taught to 15 experimental radio groups. Canada's radio farm forum, which had already been used with some success in India and in several African countries, served as the model for this experiment.

In addition to these experiences, the government launched a series of nationwide campaigns on national economic issues (1969), national elections (1970), and the ten year anniversary of Tanzania's independence (1971). Radio programs and print materials were used to help study groups understand those national issues. The number of participating study groups increased from 60 in the 1969 campaign to 1700 in the 1971 campaign.

Each campaign built upon the experience of its predecessor so that experience in organizing instruction via various media, training group leaders and evaluating results accumulated and paved the way for the mass health and nutrition campaigns of 1973 and 1974 that would involve more than 75,000 study groups.

Man is Health

After the 1971 campaign, Tanzania undertook a larger scale campaign designed to create an awareness of specific health problems among the rural population, and to recommend actions which individuals and communities could take to remedy them. The campaign would also, as a secondary objective, provide suitable follow-up materials to graduates of the National Literacy Campaign. Thus, the *Man Is Health* campaign would differ from previous efforts by virtue of its scale, its emphasis on action, and its integration with national literacy efforts.

The campaign had high-level political support. The national coordinating committee included representatives of Tanzania's single political party, the Tanzanian African National Union (TANU), and of many other government agencies: the Institute of Adult Education; the Health Education Unit, Ministry of Health; the Adult Education Directorate, Ministry of National Education; the Rural Development section of the Prime Minister's Office; and, Radio Tanzania. These organizations had the task of mobilizing the population, training and recruiting group leaders, developing content, producing radio programs and print materials, distributing print materials, and supervising the campaign.

Man is Health put great emphasis on publicity — Government officials at all levels were informed of the importance of the campaign; press releases announced each new stage in the campaign; radio spots were aired on educational and commercial radio; and, clothes bearing the campaign's logo were manufactured and distributed throughout the country.

The result of these efforts was a ten-week learning and action experience in which 2 million of Tanzania's 13 million people participated in 75,000 study groups. The results of the campaign were as follows:

- *The campaign succeeded in involving masses of rural people in learning and action at bearable cost.* Most of the costs of the campaign involved extra duties taken on by collaborating institutions under their existing budgets. The Swedish International Development Authority (SIDA) did provide a grant of US$210,000, which went into paper, printing, and distribution of texts and study guides. Total costs for the campaign have been estimated at US$0.47 per participant. (Hall and Dodds, 1974).

- *The campaign radically increased the spread of basic knowledge and information within the country.* In the health campaigns, study groups showed a 47% improvement between a pre-test and post-test on specific points of knowledge regarding health. By contrast, control groups which did not participate formally in the health campaign, showed 19% improvement on the same test. Researchers felt that control groups may also have been affected by the campaign.

- *The campaign stimulated behavior changes on the community and individual level.* The evaluation of the 1973 health campaign indicated that, in the 2,084 households sampled, specific changes (such as adding mosquito nets, constructing latrines, and clearing flies from households) could be attributed to the health campaign.

- *The campaign promoted grass-roots participation in government, and counteracted the compartmentalization of services promoted by bureaucracy.* Group leaders were trained as facilitators of dialogue rather than as sources of absolute truth. Organizers attempted to use simple language on the radio and in the printed materials. Officials from different government agencies were compelled to work together, to see others' perspectives, and to address the problems of rural Tanzania in an integrated way.

Food is Life

The nutrition campaign of 1975 was planned as a sequel to the campaign of 1973 and was designed to raise the level of functional literacy about the nutritional values of different foods and about ways to obtain a balanced diet on a limited budget; eliminate various food taboos and improper habits regarding food; encourage the use of good farming methods in order to increase the production of various types of food; and encourage cooperation in solving communal problems (Matiko, 1976).

The nutrition campaign required more direct cooperation from various institutions than did the health campaign. The campaign encouraged expectant mothers to use the prenatal clinics of the Ministry of Health and supported the establishment of day care centers by the Ministry of Social Welfare. Contributions from community agricultural plots to primary schools were also encouraged, as were improved nutrition programs in secondary schools and in factory canteens.

Tanzania's system of government changed between 1973 and 1975 to allow for more administrative control at the regional level. As a result, planning and administration of the 1975 campaign could not be conducted in the centralized fashion of the 1973 health campaign. Leaders in each region had to be convinced of the importance of the campaign relative to their other development priorities. Several observers feel that future campaigns should be conducted as regional rather than national events as an extension of the government's commitment to decentralization.

In 1975, evaluation was also decentralized as a matter of policy and philosophy. The leadership wanted communities to set their own objectives for the campaign and to monitor their own performance relative to those objectives.

In order to implement decentralized evaluation, regional seminars were held in 1974. Participants reported that they felt a sense of control over their learning groups, a feeling that was in harmony with the country's efforts at local self-reliance. During and after the campaign, it was difficult to collect data at a central point and in fact, all of the evaluation results are still not available. However, it is expected that losses in certain types of efficiency will be more than compensated for by heightened grass-roots involvement and control.

The following results of the 1975 campaign have been reported based on six sample areas:

- Increased consciousness of the need for more food production.
- Establishment of vegetable gardens and poultry units.
- Improved dietary habits.

- Creation of day care centers for infants.
- Some traditional taboos and bad practices about food have been abandoned.

Persistent Problems

In addition to their success, a number of lingering problems have plagued both the 1973 and 1975 campaigns. In many cases, study groups grew out of existing adult education classes that were much larger than the recommended size for effective dialogue. These adult education classes did not represent a cross-section of the community, but favored new literates. In addition, adult education teachers had difficulty in assuming the role of group discussion leader. Inadequate training of those group leaders who were not educators also proved to be a problem. In some areas, printed materials arrived late and in insufficient quantities. Participation levels were reduced due to scheduling conflicts with the general election, the villagization program, the national adult literacy exam, and the agricultural cultivation campaign.

Transferability

Questions are inevitably raised regarding the transferability of the Tanzanian experience to other contexts. An observer and a participant in the campaign, Budd Hall, has cited what he considers to be several circumstances in Tanzania that favored the development of effective campaigns:

- High-level political commitment to grass-roots oriented rural development.
- Strong national political support for adult education as a development tool.
- A political situation favoring interministrial cooperation.
- The decision to limit and focus the scope of campaign subject matters.
- Commitment to use all forms of local communication resources.
- The existence of a nation-wide adult education field staff extending to the grass-roots level.

Certainly, countries which lack these conditions would have great difficulty in mounting successful Tanzanian-style campaigns. However, to conclude that Tanzania's experiences were not "transferable" to countries with other political situations would be an error.

The real lessons to be derived from Tanzania are not to be learned from specific institutional structures that have been built on the educational methods or from the philosophy of development that has evolved. It is a more important lesson to recognize the benefits that derive from asking basic questions about a country's situation and direction, and from expressing the resulting dialogue in action.

The outcome of such a process seems to be development efforts to which people are deeply committed. Other countries which undergo national dialogues such as that beginning with the "Arusha Declaration" may arrive at different philosophies of development and different methods for mass education. However, if they emerge from the exercise with the self-confidence, the candor and the openness found in those contributing to this survey, then the lesson of the Tanzanian campaigns will have been "transferred". ■

Many thanks to Rommel Mauma and Hilda Kokuhirwa, both of Tanzania's Institute of Adult Education (P.O. Box 20679, Dar es Salaam, TANZANIA) and to Budd Hall, Research Officer at the International Council for Adult Education (252 Bloor Street, W. Toronto, M5S 1V6, CANADA). Readers might also consult the following publications for more information:

Barrett, Hugh. "Health Education — A Campaign for Radio Study Groups in Tanzania", *Educational Broadcasting International,* June, 1974.

Barrett, Hugh. "Planning a National Mass Adult Education Campaign", Stanford International Conference on Communication Policy and Planning for National Development, Stanford University, Stanford, California 94305, 1976.

Hall, Budd and Dodds, Tony. *Voices for Development: The Tanzanian National Radio Study Campaigns,* International Extension College (8 Shaftesbury Rd., Cambridge, CB2 2BP, ENGLAND), 1974.

Matiko, J.M.N., "Communication Policy for Education and Development: The Tanzania Radio Campaigns", Stanford International Conference on Communication Policy and Planning for National Development, Stanford University, Stanford, California 94305, 1976.

Mbunda, D., "Education Mass Campaigns: The Tanzania Experience, 'Chakula Ni Uhai', presented at the International Conference on Adult Education and Development, Dar es Salaam, TANZANIA, June, 1976.

An Evaluation of the 1973 Mass Health Education Campaigns in Tanzania, Planning and Research Department, Institute of Adult Education, University of Dar es Salaam, TANZANIA, June, 1974.

Clearinghouse Publications

The Clearinghouse on Development Communication has recently published two information bulletins. Information Bulletin Number Seven, *A Sourcebook on Radio's Role in Development,* is a bibliography of documents relating to the use of radio in education and development. Over six hundred entries have been organized into categories relating to type of document (project report, bibliography or discussion), issues (cost, policy, planning or innovation), and strategies (open broadcast, farm forum or radio school). Annotations or abstracts are provided for most of the entries and addresses for the sources of documents are listed in the appendix.

Information Bulletin Number Eight, *Tele-Niger: Adapting an Electronic Medium to A Rural African Context* is a synthesis and translation of ten volumes of research on the French-assisted educational television project in Niger. Although this project began in the early 1960's, very little information on the project has been available to English readers. While approaches to the use of media for development have changed, there are lessons to be learned from this project's commitments to rural-oriented learning.

The Information Bulletins are available without charge from the Clearinghouse on Development Communication. ■

WHO Radio Campaigns

The World Health Organization (WHO) Radio Unit wishes to cooperate with radio stations and networks throughout the world in initiating information/education programs designed to encourage community participation in public health campaigns.

The World-wide Expanded Program of Immunization is currently one of WHO's main activities. *Immunize and Protect your Child* will be the slogan for the next year's (1977) World Health Day. Programs will be designed to inform parents that vaccination can protect their children against such debilitating and killing diseases as diphtheria, tetanus, whooping cough, measles, tuberculosis and poliomyelitis — to the extent that the health authorities provide this service in the countries concerned.

The WHO Radio Unit is prepared to provide radio stations with ideas and material to help them compile a series of information/education programs to be broadcast in the course of the next year, preferably in close cooperation with the Ministry of Health in each country.

Broadcasting authorities in countries who would like to join these efforts are requested to contact: The Senior Radio Officer, WHO Radio Unit, Division of Public Information, World Health Organization, 1211 Geneva 27, SWITZERLAND. ■

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Confessions of a Rural Development Communicator

The following are excerpts from a letter by Lal Karamchandani of the Directorate of Extension, Ministry of Agriculture and Irrigation, Government of India. Mr. Karamchandani has been involved with communication and integrated rural development for the past two decades.

How do you communicate with a rural audience, or for that matter, rural audiences on a subject basic to their needs and in tune with national rural development strategies and goals?

All this assumes there is hard, solid, real information waiting to be communicated. But is this really so? There is a noticeable lack of quick, reliable, easy-flow channels for gathering information. Most of the hard information lies buried with scientists in the lab or in the field. Scientists, with a few notable exceptions, are either reluctant or unable to pass information on to the development communicator for wider dissemination.

On the other hand, there is a glut of publicity material, hand-outs, or whatever from the arm-chair scientists sitting in cozy, comfortable, insulated chambers, working on different wave lengths from hundreds of thousands of small farmers in dire need of simple, easy-to-adopt, practical research findings.

More often than not, the poor and hapless communicators are loaded with all sorts of material that policy planners want disseminated. For, to face the facts of life, it is planners who decide what is to be communicated, and, sometimes, even how it is to be communicated. Too often even the way material should be processed and the channels through which it should be disseminated are dictated by people who have, at best, a foggy idea of communication in rural settings.

This leads me to yet one more sad situation: the role played by communication researchers in advising about the channels to be preferred, the profile of the audience, etc. Sitting in ivory towers, fed with bookish knowledge (often imaginary or imported), these communication researchers feed the practitioners their half-baked ideas about the most effective timing, channels, and types of messages to be communicated — that is, if they condescend to communicate with poor practitioners at all.

No development support communication strategy or research not indigenous to the country can be adopted or even adapted with any reasonable hope of its being workable, much less successful. I would even go farther than that. In a country like India, no single communication strategy, no matter how effectively designed and employed, can ever reach the teeming masses living in half a million far-flung villages.

All these factors, big and small, land the poor development support communicator in a communication jungle, leaving him no other alternative but to fall back on the fundamentals — his own intuition and field experience. What may sound like a trial and error method is the only way he finds out the type of audiences he has to cater to, the type of information materials they can assimilate, and the channel-message mix that has a reasonable chance of getting bureaucratic clearance, financial support, and channel availability.

We know that in every developing country, there is a terrific pressure on communication resources. But not many people are aware that in the scramble for those elusive resources, the hardest hit is the developmental communicator. Priority is given to the publicity, public relations, and propaganda people, and seldom to the unspectacular development communicators.

Day in and day out the communicator is told that two media are better than one, and three are still better in getting the message across, or that spoken and picture words are better than the printed word. So the poor development communicator tries his hand at disseminating the messages through spoken and picture words, if he can ever get his hands on these channels. But he faces a problem of the lack of basic communication facilities and equipment, not to say of sophisticated equipment. It is either just not there or, if there, it is out of reach or out of order.

So the poor communicator has to fall back on the good old tried communication channels which depend upon the printed word. And that is the beginning of his troubles! Because the literacy rate is low, the communicator has to find a suitable vocabulary that will present his message in a simple yet effective style to the target audience. This is easier said than done. What may look simple on paper may often turn out to be an altogether different and difficult proposition even when communicating with a limited primary target, such as the 75,000 field level extension workers who work with untold millions of illiterate farmers on all parts of the subcontinent. Not only do the interests and specialties of the audience differ, but so do their abilities to grasp what is offered to them, a factor which cannot be accurately pin-pointed. We are still in the dark as to how much information an extension worker in a village can absorb, or as to how to make the most of the messages sent to him either through district, state, or national headquarters. Perhaps this could form a field in which research could be directed to find out the communication profile of an extension worker.

These are problems a typical rural development communicator faces day in and day out. ■

Development Communication Report

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No. 18

Mobilizing Media for Development: A Question of Will

Finding ways to encourage advertisers and the media to increase their involvement in development communication efforts was a major theme of the Caribbean Food and Nutrition Institute's five-day meeting on Nutrition and the Mass Media. *Nutritionists, media and government representatives and advertising personnel met in Jamaica last September to explore ways of improving communication between area specialists and the media. In his closing address to the meeting, Dr. Everold Hosein of the University of the West Indies discussed some of the problems faced by those who seek to mobilize the mass media for development.*

At the end of any conference it is necessary to ask what was the point of it all. We may view this meeting as a series of communication activities designed to lead to certain behavioral changes. It is quite proper for us at this closing stage to inquire as to what we have achieved and what behavioral changes we should expect to see in the near future.

Let us look at what behavioral changes we would wish for and to do so we return to the objectives of this conference.

Objective No. 1 was to create among mass media communicators an awareness of food and nutrition issues in the region and of the essential role of communication in any strategy for dealing with those issues. The implied behavioral component here is that mass media communicators will cover with sensitivity the complex problems in food and nutrition in the region. Is this likely to happen?

Objective No. 2 was to stimulate among food and nutrition workers an awareness of the potential of the mass media and other communication channels in food and nutrition. The implied behavioral component here is that food and nutrition workers will begin to use the mass media more in their food and nutrition education campaigns. Is this likely to happen?

Objective No. 3 was for us to examine and evaluate the existing content and treatment of food and nutrition information in the mass media and make recommendations for improvement. The behavioral component here is that mass media institutions will cease the publication and broadcast of erroneous, misleading, distorted food and nutrition information. Is this likely to happen?

Objective No. 4 was to identify, as precisely as possible, mechanisms that will enable the optimum use to be made of communication in the solution of food and nutrition problems. This morning's session on guidelines for change and action-plans was our identification of possible mechanisms. The behavioral component here is that the action-plans we have identified will be implemented. Is this likely to happen?

Essentially, we expect behavioral changes to take place on the part of mass media institutions and on the part of food and nutrition workers, and particularly those in government services.

While I would like to leave you on an optimistic note, this is not quite possible. My perception of Caribbean realities suggests that we should expect no behavioral changes on the part of mass media or on the part of relevant government agencies in food and nutrition — unless (and there is hope) there is the political will and the editorial will to make these changes.

But creating either political or editorial will is beyond the scope of this meeting. There are very few senior regional government administrators with us; and there are very few mass media management or editorial staff with us. Yet we in this group may be able to have some small impact and, for that reason, I would like to use this forum to address messages to those

(continued on page 4)

The Pila Project: Cassettes Reach Rural Women

The pila *communication project in Guatemala, a three-week experiment that used audio-cassette technology (ACT) to reach women, may provide a viable solution to one of the most pressing problems in development communication — finding economical yet effective ways to get usable information to pockets of rural and urban poor. Prepared as a teaching unit for the World Health Organization, the health and nutrition case study described below provides step-by-step guidelines for planning a culturally appropriate communication strategy applicable to many settings around the world.*

The communications factor in development programs has gained increasing importance in recent years. Its role has grown as communications technology has advanced and is now recognized as key to the process of change.

Not long ago, communications technology plus development equalled formal education programs facilitated by television. Today that formula includes many facets of instruction and training and a wide range of media — from puppets to satellites. Optimally, the specific development setting should determine the proper medium to be used. The current term is *appropriate technology*.

A new generation of planners is devoting greater attention to the use of simplified communications technologies in specific development settings. Some of these planners are grappling with the problems posed by the need to reach small audiences with relatively personalized messages. A village-level health and nutrition project in Guatemala provides a useful illustration of this trend. That experience is summarized in study guide form in *The Communication Factor in Health and Nutrition Programs: A Case Study from Guatemala* by Royal D. Colle and Susana Fernandez de Colle (April 1976).

(continued on page 2)

A publication of the Clearinghouse on Development Communication
Supported by the Technical Assistance Bureau of the U.S. Agency for International Development

Pila (Continued)

The *pila* project was funded by the Pan American Health Organization to determine the most effective means of bringing health and nutrition information to laboring families on Guatemala's *fincas* (plantations). Professional and governmental sources were contacted for general information on the region. In addition, the Colles researched extensively the lifestyles of the plantation workers, contacting local families, the resident school teacher, the attending physician, the mayor of the nearby town, and the wife of the *finca* owner who regularly visited the workers' homes and was familiar with their personal lives. It was decided that the women, who assumed most responsibility for household food and health decisions, would be the best target of the improvement messages. The aim of the program was to teach the women sufficient nutrition, hygiene and medical care fundamentals to stimulate an awareness of their own potential to improve their conditions.

Audio-cassettes were selected as the appropriate medium. They were simple, inexpensive, and could be replayed as many times as necessary. Cassettes also allowed the receiver rather than the sender of the message to control the time of learning.

The Colles' investigation showed, however, that the women had little spare time to devote to classes or information meetings. Typically, a woman awoke at 3 a.m., and went to bed at 7 p.m. after spending the day preparing meals, grinding corn, working in the fields, and doing laundry. A helpful communication program would be tailored around these daily tasks.

The *pila* (community laundry center) was chosen as a site where the women could participate in a non-formal learning activity without having to interrupt their work. But, though most of the women came to the *pila* every day, not all of them stayed for the same amount of time. Some came only for a few minutes while others spent several hours. Clearly, any communication method had to be flexible enough to allow for the differences in the women's schedules. And, messages had to be presented orally so the women could work while they listened.

The Colles were also concerned with quality control. They wanted a system that could dependably repeat a message, day-in and day-out, without distortion. The women had excellent memories and the Colles hoped that through repetition and reinforcement the women would be able to learn detailed information as well as general facts about health and nutrition.

Finally, and perhaps most importantly, the communication strategy had to involve the local people. The Colles wanted to design a project that could be continued without outside assistance. Eventually the people themselves would take over all aspects of the system, from planning to production and operation. To meet these goals, the medium had to be inexpensive, easy-to-operate and it had to provide for local input into programming.

Implementation

Audio-cassettes were selected as the appropriate medium. They were simple, inexpensive, and could be replayed as many times as necessary. Cassettes also had another advantage — unlike TV, radio or even extension agents — cassettes allowed the receiver rather than the sender of the message to control the time of learning.

Program content and delivery were tailored to fit the women's daily lives. Using non-professional actors and actresses, the Colles produced a series of thirty-minute programs written in the language and style of the women on the plantation and played daily. Health and nutrition messages were woven into radio novelas, summary statements, spot announcements, music, local interviews and questions. Each segment lasted no longer than eight minutes; thus, even those women who came only to draw water would hear a complete message. Because of the frequent repetition of themes in different formats, women could miss all or part of a program and still benefit from a particular message.

The actual recording, editing, assembling and duplicating of programs was done by the project staff using simple, inexpensive facilities.

Message Design

The key points of each chosen message were presented according to a sequential information-motivation-behavior formula. For example, in the case of educating villagers on how to prevent Newcastle disease in baby chicks, early programs introduced the idea of innoculation. Subsequent programs explained how innoculation builds resistance to disease, and later programs offered practical methods for obtaining innoculations. In each part of the program, as well as in the program as a whole, messages were repeated many times, explanations of how and why certain practices worked were given, and practical behavior was outlined. Since the stories overlapped and were repeated frequently, women did not need to be continuously present at the *pila* to receive the full impact of the programs.

Scheduling & Distribution

A local teenager distributed the tapes and equipment. Each morning she went to each of the plantation's three *pilas* — replaying that day's tape four to five times and counting the number of persons at the laundry site. The same program was recorded on each side of the tape, so that she did not need to rewind tapes. When the women changed their laundry schedule because of the coffee harvest, the teenager was able to change the time when the tapes were played from morning to afternoon sessions. In the afternoon, she adjusted the playing schedule according to when the women came in from the fields, a time that was influenced by the rains.

Take-Home System

Take-home cassettes were used to supplement the *pila* communication system. One of the *pila* tapes encouraged listeners to borrow a tape recorder from the *finca* office so that they could listen to a special tape about chickens. The tape offered a baby chick to the first 100 persons who could repeat a sentence about vaccinations against Newcastle disease. It was hoped that this system would expose other members of the family as well as nearby neighbors to the learning system. Take-home cassettes also allowed the women and their families more control over the timing and amount of repetition in the learning situation. Though records indicate that only a few persons actually

Development Communication Report, the quarterly publication of the Clearinghouse on Development Communication, is distributed free-of-charge to a network of over 5,500 development professionals.

An international center for materials and information on important developments in the application of communication technology to development problems, the Clearinghouse is operated by the Academy for Educational Development, a nonprofit planning organization, and is supported by the Technical Assistance Bureau of the U.S. Agency for International Development, Washington, as part of its program in educational technology and development communication. The views expressed in Clearinghouse publications are those of the authors and not necessarily those of the Agency for International Development.

The Clearinghouse is pleased to receive articles and/or photographs from its readers. Articles should be typed and should not exceed 1,000 words in length. Photographs will be retained by the Clearinghouse for its permanent files. Manuscripts and other materials should be submitted to the Editor, *Development Communication Report*.

PROJECT INFORMATION REQUEST

Having grown to over 5,500 development professionals, our network can offer a wealth of knowledge and experience to its members. In order to improve this process, we ask that you take a few minutes to answer the questions below. In return for your time, you will benefit from articles on activities of other network members in future Development Communication Reports. *(If time is very limited, please feel free to mail in your responses to side one only.)*

YOUR NAME: _____ DATE: _____

PROJECT NAME: _____ COUNTRY: _____

BRIEF DESCRIPTION OF PROJECT: (Highlight any innovative uses of communication.)

Subject Area:

____ Agriculture	____ Population/Family Planning	____ Education
____ Health	____ Literacy	____ Marketing/Coop
____ Nutrition	____ Community Development	____ Industry

Type of Media:

____ Cassette recorder	____ 8mm film	____ Newspaper	_____
____ Reel-to-reel recorder	____ 16mm film	____ Books	_____
____ Radio	____ Filmstrips	____ Pamphlets	_____
____ Two-way radio	____ Filmloops	____ Posters	_____
____ Videotape (VTR)	____ Slides	____ Billboards	_____
____ Television	____ Photographs	_____	_____

Materials Produced By:

____ project staff ____ sponsoring agency _____

Method of Presentation:

____ media only ____ media & extension worker ____ media & community rep. _____

Message Approach:

____ lecture ____ drama ____ music ____ comedy ____ dance ____ "advertising" _____

Target Audience:

____ men ____ adult ____ rural ____ literate No. of persons in learning group: _____

____ women ____ youth ____ urban ____ illiterate Total number in target audience: _____

Learning Site:

____ home ____ school ____ clinic ____workplace ____ community meeting place _____

Scale of Project:

____ village level ____ regional ____ national No. of villages in project area: _____

Project History: _____ to _____

Current status of project ____ planning ____ implementation ____ evaluation

Number of months devoted to: ____ planning ____ implementation ____ evaluation

Project Personnel:

Number of: ____ full-time staff ____ part-time staff ____ community representatives

Sponsoring Organization: _____

Cooperating Agencies: _____

_____

What were the objectives of the project?

What aspects of the project (i.e., planning, media selection, message design and production, organizational communication, interagency cooperation, and/or evaluation procedures) would be of special interest to others involved in the development process?

Summarize the major successes (failures?) of the project. What factors contributed to each of these points?

What were the "lessons learned" from this project?

Have the experiences of the project been applied to any other development projects? If so, which ones?

For More Information, Contact: _____

_____

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U.S.A.

borrowed a tape recorder (several people expressed fears that they might damage the equipment; others did not have time to stop by the plantation office or were reluctant to face the many men who loitered there), the word about the baby chicks spread. In less than an hour, 100 persons had repeated the innoculation phrase and received a baby chick.

Feedback

Some aspects of the *pila* system allowed for immediate feedback and flexibility. Since a local girl and a cassette system were the mainstays of the project, the programs could be scheduled and rescheduled at the women's convenience. Information units were assigned numbers and charted. These charts enabled program designers to assure that the necessary repetition was included. Numbering made it easier to identify learning goals and achievements, and a simple survey was used to determine the extent to which the project attained its goals.

Results

The *pila* project demonstrated that:

- The cassettes and delivery system were flexible enough to adapt to changes in the women's schedules.
- Women were receptive to the use of the *pila* as a nonformal learning site. They enjoyed the programs and were disappointed when the project stopped.
- According to a follow-up survey, the program produced an immediate attitude and behavior change. (Because of the 1976 earthquake, a planned longitudinal study was cancelled.)
- The program successfully used non-professionals to produce tapes and act in dramas.
- The people mastered the technology easily, and there were no equipment failures.

Conclusions

Three guiding principles emerge from the Guatemalan audio-cassette experiment and suggest a communications model for other village settings.

The first is that communications technology need not be sophisticated to be effective. In their foreword, the Colles point to simple technology as the most fitting extension of "the communication powers of those people who work on the village level."

The two additional principles reinforce that of simplification and permeate the design and implementation of this project. One is personalization of solutions to specific problems: the need to build a project on the special characteristics of the region, and on the goals, beliefs and attitudes of the target audience.

The final essential principle is that change and development come from within village people themselves and that the motivating force for this change is knowledge. The Colles speak of a "poverty in information," that isolates rural people from the basic knowledge they need to improve their own lives.

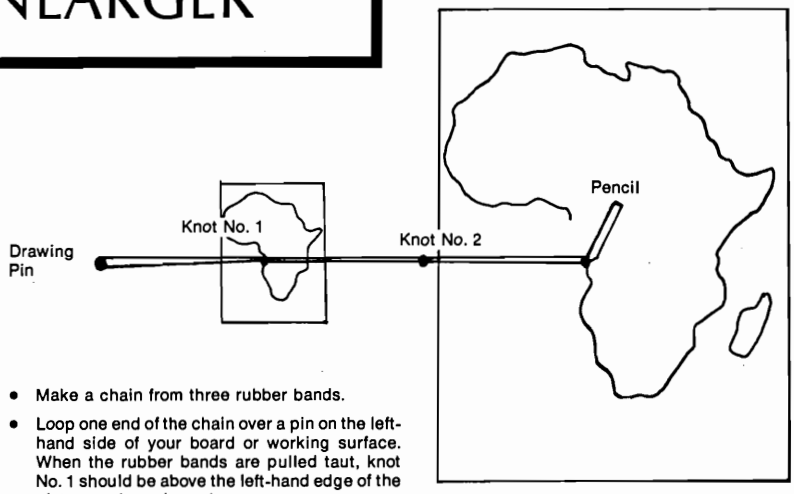
Information is critical "not because it alone can solve problems, but because it is a crucial part of helping people understand why they have problems, how they can get help, and how they themselves can contribute to ameliorating conditions through their own efforts." ■ Staff

(For further information, contact Royal D. Colle, Department of Communication Arts, Cornell University, 640 Stewart Avenue, Ithaca, New York 14850.)

Cheap & Easy

RUBBER BAND ENLARGER

Lindy Layer



- Make a chain from three rubber bands.
- Loop one end of the chain over a pin on the left-hand side of your board or working surface. When the rubber bands are pulled taut, knot No. 1 should be above the left-hand edge of the picture to be enlarged.
- Insert the point of your pencil into the loop at the other end of the bands. Keep the pencil upright and have one finger on the rubberband to prevent it from slipping.
- Make an enlarged copy by pulling on the pencil and making knot No. 1 follow the lines of the original picture.

Do not worry about faults and imperfections. You will improve with practice. Corrections and improvements can always be made when you go over the outline with a pen or crayon.

In Memoriam . . .

One of the true masters of "Cheap and Easy" audio-visuals died last December. The love and commitment fostered by Harry Frye of Indiana University will make him as remembered as the techniques he taught his students — lifts, photosketches, etch bleach, water colors, photography without a camera. His greatest gift was stimulating those who worked with him to stop and think about materials long enough to KNOW each one — to learn its properties, its actions, reactions and 45 different ways to use it. He encouraged experimentation and helped us to develop the confidence to doodle and dabble until something, ANYTHING happened. We will miss him.

*I have begun to compile materials for a "Cheap and Easy" book. Please write to me about your needs so that I can be sure to include information about processes and substitute materials that will be useful to you.

U.P. 594 Logan Avenue, Toronto, Ontario, CANADA M4K3B8

Resourcefulness: Sourcebook on Appropriate Technology

Volunteers in Asia, Inc., has just published the second edition of the *Appropriate Technology Sourcebook* by Ken Darrow and Rick Pam. The sourcebook, which is a guide to practical plans and books for village and small community technology, includes critical reviews of more than 375 publications on energy sources, architecture, agriculture, health care, print, village industries and other areas of intermediate technology. Copies may be ordered from the Appropriate Technology Project, Volunteers in Asia, Box 4543, Stanford, California 94305, USA. Regular price is $4.00 ($2.00 for local groups in developing countries). Discounts are available for purchases of more than 10 copies. ■

Will (Continued)

who could not be with us, and I should do so briefly.

To political leaders and senior government officials I would like to reiterate a theme I have been plugging these past 18 months. And that theme is that Caribbean governments need to become seriously committed to the systematic application of communication methods and technology to our development activities, be they in health, food, nutrition or industry. Over and over again I must repeat that the conventional publicity and public relations agencies of government are inadequate and inappropriate institutions to deal with our development communication concerns. Publicity and public relations have little to do with the communication involved in getting two or three civil service departments in the Ministry of Health to agree on a consistent body of nutrition information. What is required in every government Ministry are small units of communication specialists who can devise total communication plans using all available media resources to support development activities. One would advocate the establishment of Communication Planning Units in every sector of government activity.

Until such time as we have a strong political commitment to the systematic use of communication, lower echelon staff such as health educators and food and nutrition workers will always be frustrated in their attempts to implement innovative communication education strategies.

When there is the political will to create such communication units within governments, then we can hope for the kind of behavioral changes we expect of food and nutrition workers in government. Until such time as we have a strong political commitment to the systematic use of communication, lower echelon staff such as health educators and food and nutrition workers will always be frustrated in their attempts to implement innovative communication education strategies.

Political leaders have a keen sense of effective communication campaigns — but this is evident only every five years in the Caribbean, when organized, systematic, sophisticated communication campaigns are designed for election purposes. What we ask for now is a keen sense of effective communication programs for food and nutrition. Of course, the question of political will does not stop here. It will require political will to establish those standards and communication policies which will halt the manipulation of the people by unethical advertisers. But we will let the matter of political will rest for now.

To mass media managers and editors, I would like to urge a reconsideration of their attitudes toward information emanating from government development agencies. There is a notion among many media executives that to support enthusiastically any government development program is to cease being bastions of the free press. While I strongly advocate the absolute necessity of the mass media or anybody else to criticise governments for their inadequacies and inefficiencies, I cannot endorse what I sense is an aversion by media to support specific national development programs.

Many media managers on hearing the term "development communication" immediately put up their defenses and scream "freedom of the press" . . .

I know many media managers who on hearing the term "development communication" immediately put up their defenses and scream "Freedom of the Press." I can see no conflict between media criticism of government (which is the only important aspect of press freedom) and media support of specific national development programs agreed upon and implemented by the government on behalf of the people.

Therefore, the use of media space to disseminate information on proper nutrition need not interfere with the use of media space to criticise governments for their inadequate food production programs.

When there is this editorial will to support national development activity, when there is this editorial will which sees no inconsistency in being critical and yet being supportive, then we can hope for the behavioral changes we expect from this meeting. ■

About CFNI

The Caribbean Food and Nutrition Institute was established in 1967 to act as a catalyst among persons and organizations concerned with food and nutrition in the CARICOM region. Specialists in health, agriculture, education, nutrition, dietetics, and data analysis conduct research; organize workshops and training programs; provide technical and advisory services; and prepare information and educational materials, including *CAJUNUS*, a bimonthly newsletter. For more information about the Institute, which operates centers in Jamaica and Trinidad, contact the Director, Caribbean Food and Nutrition Institute, P.O. Box 140, Kingston 7, Jamaica, WEST INDIES.

Dilemmas (Continued)

grams connected with rural development. The Ministry would put the team in touch with provincial education authorities. There was still no counterpart team.

Assisted by the committee, the team made its travel plans and went into the field unaccompanied by any Ministry representative. After completing its field work, the team prepared a series of proposals and discussed them with members of the committee. The committee promised to transmit the report to the Ministry but, despite repeated attempts to learn the Ministry's reaction to the team's report, nothing further was heard about the proposals.

Suddenly, to the astonishment of the international organization and the consultant team, the news media started broadcasting unfavorable commentary on international assistance in general and on the team in particular. Through a cleverly composed jingle and a long news release, the team was accused of attempting to subvert the country and of establishing a beachhead for multi-national companies. To prove the point that an international organization was prying into the lives of peasants for a sinister purpose, the report broadcast samples of the team's questions:

To a rural broadcasting station —

- How do you contact the national radio station headquarters?
- Do you have a sample peasant program?
- How do you receive your programs from the capital? Do they come by bus, or by plane?

To the administrator of an adult education school —

- What do you think of the local radio programs for peasants?
- How do you train monitors? Name the vilages in which they work.
- What problems do monitors have in each district?

To storekeepers —

- What radio models and parts do you carry and what are your prices?
- How much demand is there for radios?

The broadcast concluded with an appeal to loyal countrymen to oust the foreign menace and to be alert against a counter-revolutionary government plot.

The team later learned that the Ministry believed that the field visits had been made without authorization. They also discovered that the Minister was only interested in building a single radio station in the capital.

The Ministry remained silent on what it proposed to do with the reports. After consulting with the foreign ambassador and the agency director, the team completed a report of its activities and left the country.

Analysis

In retrospect, it is easy to interpret the Ministry's reluctance to appoint counterparts as a warning that something was wrong. However, many teams are faced with delayed action by government agencies and there was little evidence that this situation might prove different. When, however, the Ministry let the team proceed to rural areas unaccompanied by Ministry representatives, warning signals should have been read. Not only was the Ministry absolving itself of responsibility for anything that might happen, but it was encouraging foreigners to meet with rural officials alone — officials who often hold a deep suspicion of the central government.

The reasons for the Ministry's actions can only be surmised. Perhaps they were based on:

- Second thoughts about involving foreign personnel in sensitive issues involving rural development.
- Disappointment at having the single radio station proposal turned down.
- The failure to involve officials from the national telecommunications agency in planning for the project, thereby incurring their veto.
- Last minute opposition to the project from various parts of the society.

For whatever reasons, the project did not take place. And many needs of the rural target population continued to be unmet. All development efforts today take place against a political backdrop which requires extreme sensitivity of both international organizations and ministries. Send us your thoughts regarding how such situations might be avoided in the future. ■

Reprinted from *Communications Technology for Development,* by Howard B. Leavitt and Peter L. Boynton, Academy for Educational Development, 1414 22nd Street, N.W., Washington, D.C. 20037

ETV Reviewed

Of interest to development communicators is *Educational Television: A Policy Critique and Guide for Developing Countries.* Robert F. Arnove edited this collection of essays that examine why the many promises of ETV proponents have not been fulfilled. The book costs $17.50 and is available from Praeger Publishers, 111 Fourth Avenue, New York, New York 10003, USA. ■

More on Integrated Rural Development . . .

"Communication and Integrated Rural Development" (see ICIT Report No. 16) continues to evoke comments from our readers. David Radel of the World Bank wrote:

I did want to make one comment about a statement Phil Coombs *et al.* made in the article entitled "Is IRD a Cheshire Cat?" On p. 4 they state that "the artificial distinction (largely an invention of the 'communicators') between Information, Education, and Communication in the family planning field has been particularly unfortunate; it has prompted an unwholesome fragmentation rather than integration . . ."

I feel that quite to the contrary this concept of IEC has by and large served to help integrate what have tended to be very disparate streams. Most of the problem does not seem to be at the conceptual level but at the professional level. Some people involved in what I would call IEC activities identify themselves as educators and others, doing almost the identical thing, identify themselves as communicators.

Certainly one finds a fair degree of integration in some of the organizations that have used the term IEC; the Family and Community Study Center at the University of Chicago and the East-West Communication Institute are examples. In the latter case, activities brought together under the IEC rubric have ranged from mass communication, to non-formal education, to technical information services. ■

Training Fieldworkers

The International Planned Parenthood Federation is now offering a multi-media kit to be used in training family planning fieldworkers. *Meeting the People* illustrates a systematic, step by step approach to building a training course but is not in itself a complete training package or course on family planning.

Based on the Indonesian fieldwork training experience, the kit was designed as a resource to be adapted or extended to fit the needs of each country's program. *A Guide to Trainers* and a filmstrip form the core materials of the kit. Supplementary materials include a cassette tape with transcript and notes, a monograph on training, a materials resource list, and various sample materials for trainees. A 16mm film, *The Fieldworker in Indonesia,* is also available at additional cost.

For more information about the kits, which cost US $25.00 (£ 14.00) each plus postage, contact the Education Department, International Planned Parenthood Federation, 18/20 Lower Regent Street, London SW1Y 4PW, ENGLAND. ■

Learning Aids Exchange

The South Gujarat University in India has established a Resource Unit on Programmed Learning Material and Tests. The Resource Unit, which currently has about 250 programs and tests on various subjects, will act as a reference library for materials produced in India and abroad. Dr. G.B. Shah, Head of the Department of Education, has requested that copies of programmed materials and tests be sent to the unit for use in the collection. The unit will pay, if necessary, for these materials.

Programmers and researchers are urged to make use of the Unit. A catalog of the collection will be sent on request and a typed copy of actual programs and tests can be supplied on a payment basis. For further information, contact: Dr. G.B. Shah, Department of Education, South Gujarat University, Surat 395 007, Gujarat INDIA. ■

New Materials on Media Skills

The British Council has produced 10 radio training kits for use by producers, trainers and teachers around the world. Prepared by professional broadcasters and scriptwriters, most of whem have extensive overseas experience, the series includes: *Sound, the Studio,* the *Illusion of Reality, Writing for Talking, Dialogue and Drama, Music in Educational Radio,* the *Producer at Work, Editing, Teaching English by Radio,* and *Using Radiovision.* Tape recorded, illustrated lectures provide models of good programming and opportunities for students to practice production skills. Included with each kit are a script and multiple copies of notes, examples and exercises. Some kits feature slide/tape demonstrations and one contains two short 16mm animated films.

A demonstration kit is available from the Council at no cost. For more information and a price list, contact the Management Section of the Council's Media Department.

The Council has also published *A Catalogue of Radio and Television Training Materials from the United Kingdom,* an annotated listing of about two hundred audio-visual and printed materials for use in training radio and television personnel. Listings in each section (Radio, Television, Film for Television and Television and Film) cover a wide range of training materials on production, operation, and engineering. Distribution and publication information is included with each listing. Copies may be ordered from the Media Department, The British Council, Tavistock House, Tavistock Square, London WC1H 9LL, ENGLAND (Tel. 01-387-0166). ■

Dilemmas in Country X: Candid discussions about failures

Dilemmas in Country X *is the first in a series of articles about something that is rarely included in descriptions of development efforts — what went wrong and why. Because* Development Communication Report *believes that it is as important to analyze the lessons learned from one's failures as it is from one's successes, we urge our readers to share their experiences in using communication in health, agriculture, nutrition, education and family planning projects. Authors' names will be withheld on request and all references to specific countries or agencies will be omitted. We hope that this forum will encourage a candid discussion of what* really *happens during a project. We also encourage our readers to give their opinion as to how* they *would have handled the dilemmas cited in the series.*

Our first "dilemma" describes an all too familiar problem in many development projects — separating politics and development. Howard B. Leavitt relates the experience of a team of consultants whose recommendations conflicted with the real interest of the host government. Dr. Leavitt is currently Associate Director of the International Council on Education for Teaching (ICET), One Dupont Circle, N.W., Washington, D.C. 20036, USA.

Like it or not, the arrival of a visiting team of foreign consultants is a political act. Sometimes, the work of a foreign assessment team can produce political consequences so inflammatory that a project is stopped.

A small, less developed, agricultural country requested a team of six consultants to help plan the first stage of an integrated rural development program utilizing radio. Radio was seen by the local government and international officials as a potentially effective way of reaching the country's rural population with information on health, agriculture, nutrition and education.

Although it was understood before the team arrived that counterparts had been designated by the Ministry of Education, this proved not to be the case. During the team's first few days in the country, the international organization vainly tried to get the Ministry to assign a counterpart team. Finally, the team was invited to meet with high level Ministry officials about possible uses of radio for rural development. At this meeting, the Ministry revealed a proposal that would use a single high-powered radio station in the capital city to reach rural populations throughout the country. The Ministry agreed to appoint a committee to work with the team on this proposal and reaffirmed that a counterpart team soon would be appointed.

The first meeting with the committee was cancelled. By this time the consultant team had been in the country one week and no counterparts had been designated.

When the team and the committee finally met, the consultant team revealed that the estimated cost of the single transmitter was so high that they questioned the feasibility of the proposal. It also appeared doubtful that even a high powered transmitter could reach the more remote areas of the country.

The Ministry withdrew its suggestions for a single radio station and agreed to a decentralized system of repeater stations in different areas of the country. It was agreed that the consultant team should visit two of the sites, exploring existing facilities and the potential for radio pro-

(Continued on page 4)

SALUBRITAS

The division of International Health Programs of the American Public Health Association, in co-sponsorship with the World Federation of Public Health Associations, is publishing *SALUBRITAS*, a quarterly newsletter on low-cost health delivery systems in developing countries. The publication is aimed at establishing a two-way communication flow among health workers having common problems and similar goals and is published in English, Spanish and French.

The target audience includes health-related workers at the grass roots level and the decision makers who are responsible for establishing policies and priorities within their countries' health systems. The newsletter is also distributed to government agencies, training institutions and bilateral and multilateral organizations.

For further information write to Sylvia C. McCracken, Editor, International Health Programs, American Public Health Association, 1015 Eighteenth St., N.W., Washington, D.C. 20036, USA. ■

Training in Rural Evaluation

Media experts often talk about the importance of audience feedback. But exactly how does one go about collecting such feedback in the rural areas of developing countries? Dr. James Theroux of the University of Massachusetts has some answers to that question based on his recent experience in Ecuador, where he trained a rural radio production team in the methods of formative evaluation. For information about the materials used for this training, write to Dr. James Theroux, Center for International Education, Hills House South, University of Massachusetts, Amherst, MA 01002 (Tel: 413/545-0465). ■

Development Communication Report

Clearinghouse on Development Communication

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In this issue . . .

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Communications and Development: Two Views

Many interrelated communications issues have been debated in international forums in the last few years: the free flow of information across borders, dominance and dependence in international communications, the role of communications in promoting national development, and freedom of expression.

Each of these issues bears directly on the use and the effectiveness of development communications. News from abroad unquestionably affects our beliefs and knowledge about development — regardless of where we live. Developing countries expect the West to be sensitive to Third World problems. At the same time, they expect their own citizens to adopt positive and supportive attitudes toward national development efforts. When such national goals conflict with individual rights, the issue of freedom of expression naturally comes into play.

Two of many possible views on current international communication issues are presented here — one that of an American academic, the other that of an Indian journalist. John Lent traces the rise of development journalism and development communication from the point of view of those who hold that individual freedom of expression should be treated as an inviolable right. Narinder Aggarwala, sympathetic to the collectivist orientation of many Third World states, proposes a path of accommodation and of compromise on the issues that underlie the international debate on communications.

While the views expressed here are those of the authors only, the issues addressed are of concern to all who plan, implement, or evaluate projects in which communication media and technology are applied to development problems.

Development Communication: Watch Dog or Lap Dog?

The systematic use of communication to support national development grew out of the fairly detached and in-depth development journalism of the 1960s and has swept through the Third World in the last decade. "Development Communication" is a major government tool used in numerous developing countries. It is the basis for academic programs in Asia and the Caribbean and many regional organizations, publications, and conferences are dedicated to its propagation. But development communication is also the bane of the International Press Institute (IPI) and the Inter-American Press Association (IAPA), traditional defenders of press freedom.

Exactly how did development journalism evolve into development communication? What has happened to government-media relationships and traditional press freedom in the Third World in the wake of this evolution? How are the mass media being used to shape and spread national ideologies? How do supranational agencies influence national communication policy? These questions are now before us.

Development journalism's Asian founders believed that to get to the heart of development issues, journalists had to be versed in economics. As director of the Philippine Press Institute from 1963, Juan Mercado first sponsored seminars on development topics and implemented news policies in support of development reporting. Alan Chalkley was also laying the groundwork for development journalism in the mid-sixties. Elsewhere in Asia, others such as Chanchal Sarkar, director of the Press Institute of India; Amitabha Chowdhury, head of IPI's Asian Programme; Maasaki Kasagi of *Nihon Shinbum Kyokai,* and Mochtar Lubis, editor of *Indonesia Raya,* recognized that new approaches to covering Asia were necessary because of the "cumulative effect of the growth of national economies, changes in the character and profile of the audience and, above all, the results of people's experiments and frustrations with new political systems."

Together these men formed the Press Foundation of Asia, an entity endowed by

(Continued on page 2)

Press Freedom: A Third World View

In securing a two-year delay in the decision on the Soviet draft declaration on mass media at the biennial UNESCO General Conference in Nairobi in November, those championing the cause of the "unfettered flow of information" won a pause in an open-ended contest but no more. The issues of free versus controlled and Third World versus Western press are likely to surface again and again at various international forums.

In fact, the Nairobi stay may prove of little value unless it is followed by swift and concerted action to eliminate the causes that have contributed to the growing disaffection (open hostility, in some cases) of Third World leaders with the news media in general, and Western news agencies in particular. It is this disenchantment which is behind the support of some Third World countries for the Soviet proposal making "States responsible for the activities in the international sphere of all mass media under their jurisdiction."

One sure way of not redressing the situation will be to begin with an unqualified denunciation, as "sinister" and "ominous," of the Third World countries' desire to establish and develop national news agencies, leading ultimately to a multinational news agency of developing countries. There is a genuine need for creating a channel through which Third World nations can get news about each other, and the industrialized world, from their own perspective.

At present, Third World countries primarily depend upon four Western news agencies (the Associated Press, United Press International, Reuters and Agence France-Presse) for news about each other. News about Botswana, more often than not, reaches the people of neighboring Zambia through one of the four Western agencies. The selection, the style, the content, the treatment and the perspective of practically all the news flowing in and out of the Third World reflects the personality, preferences and the needs of the Western media.

This is what developing country leaders generally refer to as the "one-way flow" of news. "Why should we," asks Luis

(Continued on page 3)

A publication of the Clearinghouse on Development Communication
Supported by the Technical Assistance Bureau of the U.S. Agency for International Development

Asian newspapers and the Ford Foundation in March 1967 to promote development journalism by using a news agency, DEPTHnews (an acronym for development, economics and population theme concentrating on in-depth reporting) as a training organization. Soon, PFA's 200 outlets were turning out seven additional editions of DEPTHnews in different Asian languages, a pictorial edition, and a weekly reference bulletin *(Data for Decision)*.

In short, development journalism was initiated by journalists and funded by nongovernment contributors to insure that the development story was covered in depth, but in language simple enough for all to understand.

In the early 1970s, however, as Third World governments grasped the potential of development journalism for promoting their ideologies and campaigns, the term "development communication" came to signify a commitment to covering a nation's problems systematically. It was also broadened to include all communication "applied to the speedy transformation of a country from poverty to a dynamic state of economic growth that makes possible greater economic social equality and the larger fulfillment of the human potential."

Various government ministries, supported by the United Nations and other international agencies, encouraged the creation of integrated national communication policies for tackling problems of poverty, population, and health. International agency specialists spread the notions of development communication and development-supportive communication throughout the Third World.

Government Relationships

Governments soon realized that if media were to be used to implement national development strategies, then the authorities had to control the media. Some thus issued more subtle media guidelines and redefined traditional ideas of democracy and press freedom. Naturally, two value systems hit head on. In the traditional one, the press hounds government and supervises the public good; in the newer one, the press defers to authority and becomes a tool for national development.

Caught in this clash of values, some Third World leaders claim that a press that questions or hampers their efforts to promote national unity and well-being is irresponsible. They argue that in a developing nation preserving press freedom is less important than satisfying needs for food, shelter, and health. Or they say that developing nations face internal and external threats to stability that make Western-style press freedom inappropriate. Others hold that investigative and critical journalism as practiced in the West is incompatible with Third World customs such as respect for authority.

Rising Authoritarianism

Development journalism has grown up at a time when authoritarian tendencies in the Third World are gathering force. One dominant trend is toward centralized government, with one person rule and in-family power concentrations. Under political pressure, these rulers simply shuffle aside constitutional guarantees by issuing emergency or martial law decrees.

As governments promulgate and alter press laws, suspend newspapers and arrest journalists, take possession or control of ever more media, and limit what foreign correspondents can see and write about, maintaining an independent press becomes virtually impossible. For example, the licensing of newspapers has become the norm in many parts of Asia, Africa, and the Caribbean. In most of the Caribbean, press conferences are nearly non-existent. In one Middle-Eastern country, private citizens must secure government consent before granting interviews.

Newspapers and other media are joining broadcasting as government properties; as of late 1975 there were only two dailies in East and Central Africa in private hands. Asian and African nations are also taking possession or control of news services. In most Asian countries, one national news service, often government owned and controlled, screens all domestic and foreign news. In some nations with more than one news service, governments urge agencies to merge for easier scrutiny. In early 1976, the four major agencies of India were merged; the South Korean government in 1974 combined three major services in Seoul; and the government-owned news services of the two Vietnams merged after 1975.

Bent on creating favorable international impressions, many Third World countries have begun to pay closer attention to the foreign correspondents in their midst — chastizing them for screening developing nations' events through Western eyes, favoring those who approve of local governmental policies, and punishing those who do not. Penalties include stiffer entrance requirements, denial of access to newsworthy persons and events, prepublication censorship, and expulsion.

The reasoning given by Third World leaders for these actions has been that the much touted free flow of information has become a one-way movement. At the New Delhi meeting of information ministers from non-aligned nations in July 1976, these leaders contended that "the majority of countries are reduced to being passive recipients of biased, inadequate and distorted information."

Promoting National Ideologies and Campaigns

Of the Third World nations that use the media to propagate national ideologies and campaigns, some look to China as a model. Others develop their own strategies and techniques, sometimes promoting a general ideological campaign and sometimes enlisting the media to support specific short-term programs.

In Malaysia, for example, mass media are implored to promote goals written in the Second and Third Malaysia Plans and the *Rukunegara* (National Ideology). Malaysian mass media do little investigative reporting, print government speeches and press releases verbatim, and ignore opposition. According to one researcher, the largest dailies devote between 32 and 52 percent of their content to national development. Similarly, newspapers in Singapore uncover elements the government deems subversive but refrain from investigating matters potentially embarrassing to the leadership.

Role of International Organizations

The major impetus for adopting development communication and national communication policies has come from supranational agencies, chiefly UNESCO. At a 1971 UNESCO meeting in Paris, it was proposed that a national communication policy council made of opinion leaders be formed in each country as a first step toward creating communication-planning units. With efficiency as its rationale, UNESCO hoped that all national communication planning systematically would begin to promote planned educational and social change, with UNESCO serving as the "coordinating agent, free of political or commercial taint, at the planning and research level."

UNESCO's philosophy has taken a beating since 1975 by such advocates and monitors of press freedom as the International Press Institute (IPI), Inter-American Press Association (IAPA), Freedom House and La Fédération des Editeurs des Journaux et Publications. In particular, the IAPA attacked UNESCO for inducing governments to tighten their media control, while Freedom House came down hard on UNESCO's stand on development journalism, claiming that the latter "distorts and exploits the thoroughly laudable goals of economic, political and educational development."

The testing ground for the implementation of the UNESCO model of national communication policies became Latin America. In July 1974, 16 experts on communication policies in Latin America who met in Bogotá concluded that freedom of expression, when "closely and especially linked to free enterprise," constitutes a social imbalance; commercially-owned media impose alien cultural traits or conformity, the experts maintained, and both impede social change. The key recommendation of the Bogotá conferees was that formulating national communication policies "should be the exclusive concern of the State, acting as it does on behalf of

the national community." A year later in Quito, another UNESCO group called upon Latin American governments to insure, among other things, that government-controlled national news agencies would be "exclusively empowered" to disseminate all outside news that referred to [illegible]ternal affairs.

When the findings of these conferences were disclosed, UNESCO officials insisted that the agency was impartial on the role of mass media, that it only attempted to point out trends and to offer alternatives. Others such as former UNESCO Director of Public Information Joel Blocker, however, thought that UNESCO was taking a new direction — a politicized one — under Director-General Amadou Mahtar M'Bow.

Some Latin American governments adopted the ideas that surfaced at the conferences. For example, Mexico has established a Central Communication Office whose aim is "to nationalize public opinion"; the Costa Rican legislature is considering a law to establish the state's right to regulate media as a public service.

At another UNESCO-sponsored conference held in Paris in December 1975, a draft resolution entitled "Draft Declaration on Fundamental Principles Governing the Use of Mass Media in Strengthening Peace and International Understanding and in Combatting War, Propaganda, Racism and Apartheid" was prepared. At the meeting, a paragraph of the 1948 United Nations "Universal Declaration of Human Rights" that placed international media [illegible]der the protection of "relevant international agreements" was replaced by a clause that makes individual states themselves responsible "for all mass media under their jurisdiction."

Meanwhile, the IAPA denounced the UNESCO recommendations as "totalitarian" at its mid-1976 session in Aruba. Simultaneously, the IAPA and the Inter-American Broadcasters Association issued a joint protest.

In response to this criticism, the UNESCO Secretariat announced that its purpose was to discuss measures to make information flow out of as well as into developing nations. But at a meeting of 21 nations held in Costa Rica in July of 1976, some communications experts called for the creation of government-run news agencies "exclusively empowered" to disseminate information from abroad; the enactment of measures permitting arrests of international press representatives whose papers or news services publish criticism of the host country; and the nationalization of independent news media. The major thrust of the 32 draft resolutions drawn up in Costa Rica was to reduce the region's dependency on information and entertainment generated by a few wealthy nations: one resolution reiterated the call for a Latin American and Caribbean news agency and pool; another held that the content of news dispatches received by satellite should be limited.

The criticism to the contrary, development communication as UNESCO envisioned it had gathered momentum by 1976. Groups such as AMIC in Singapore and the East-West Communication Institute in Honolulu lent research, planning, and supervision support to UNESCO. Funding agencies for Third World projects seemed to acquiesce to the new thinking, while non-aligned nations met in New Delhi and Colombo to develop a Third World newspool.

When UNESCO held its nineteenth General Conference in Nairobi in late 1976, many of the resolutions that emerged at the Latin American conferences and at the non-aligned summit were on the agenda. The most controversial item was still the "Declaration on Fundamental Principles Governing the Use of the Mass Media," which was tabled when Western nations and the Soviet bloc reached an impasse on the issue.

Conclusion

As development communication becomes more solidly fixed in Third World nations, many questions require answers. Traditional concepts of press freedom have clearly changed. Some governments have promised to expand freedom of expression once their nations reach their development goals. But who decides whether a nation has reached such goals? Will rulers once exempt from criticism ever allow the media to criticize them constructively? And even if the rulers do eventually permit criticism, will the media be prepared and bold enough to accept the challenge after years of guidance and self-restraint? Then, too, we must ask if the media are promoting the development programs or the personalities and campaigns of the officials behind them? What impact can messages disseminated by government media have in the many Third World countries where people have grown suspicious of officialdom? If the critical function of the mass media has been stifled, can government and the public still distinguish sound and useful ideologies and campaigns from vague and useless ones?

Still other questions on the role of international agencies in setting development communication priorities are in order. Are such organizations practicing cultural imperialism as they try to integrate communication policies in nations with very diverse traditions? Will image-conscious supranational organizations find themselves overwhelmed by pressure in some developing countries? As the Third World countries nationalize their mass media, will the UNESCO panels of experts be made up increasingly of government media personnel?

These and other questions must be answered soon if the Orwellian tendencies taking hold in much of the world — tendencies toward the establishment of national communication policies to promote national ideologies, toward the redefinition of press freedom, democracy, and the free flow of information, and toward the homogenization of communications policies and programs — are to be reversed.

■ *John A. Lent is Professor of Communications at Temple University. An expanded version of this article is scheduled for publication later this year in* Index on Censorship.

A Third World View (Continued)

Penalver, Venezuela's Minister of Information, "rely exclusively on foreign news sources, which represent powerful economic interests, to hear about our own neighbors?" Developing countries want to establish a counterflow of world news with a Third World perspective which need not, and should not, be an official one.

When Third World leaders criticize the Western press for biased and distorted reporting, they are not, generally speaking, [illegible]estioning the factual accuracy of West[illegible]n news agencies or their correspon[illegible]ents. What they feel chagrined about is the lack of a Third World perspective, as well as appreciation of the Third World information needs, in the news disseminated by the Western news agencies.

Distortion does not necessarily mean a false presentation of events but rather an arbitrary selection and a slanted evaluation of reality, says Juan Somavia, Director of the Latin American Institute for Transnational Studies in Mexico City. The alleged objectivity of news presentation, according to him, is belied by an arbitrary use of language, overemphasis on events of no real importance, and the general practice of "making news" by presenting "isolated facts as a nonexistent whole."

Pressed by the limitation of space and of time, Western correspondents tend to select only the news that they think is of interest to their readers/subscribers in the industrialized countries either because it is "sensational" or deals with something "strange or exotic." Wars, disasters, famine, riots and political and military intrigues do make better copy than economic development. In this process, the information needs of the Third World are either forgotten or are given very short shrift.

For example, Tanzania's efforts to build up a national cadre of secondary school teachers may not be "sexy" enough for the Western media, but it represents a model to many developing countries suffering from similar problems. This kind of news also shows a certain kind of movement on the development front in the Third World.

"If Swaziland implements a successful new system for irrigating orange groves, we'd like to hear about it," stresses Adnan Zmerli, Tunisia's representative to the Paris-based UNESCO, voicing a sentiment commonly expressed by Third World countries. "We also want to know what is happening in Kenya — not just what goes on in Paris, Washington and Moscow."

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Some Western correspondents and commentators have erroneously equated the increasing Third World demand for development-oriented news with that for government-controlled news and information. Development-oriented news is also not identical with "good" news, the lack of which is constantly bewailed by government leaders in the Western world. Development journalism, a relatively new genre of reporting in the Third World, is not much different from what usually appears in Western newspapers in community or general news sections. But an international counterpart of community news is missing from Western media files.

Development journalism should also not be confused with Development Support Communication (DSC) programs which utilize various media — not just mass but any media — for promoting economic and social development. Dr. Paul Fisher, Director of the Freedom of Information Center, Columbia, Missouri, is probably referring to the DSC phenomenon when he says: "There is a tendency among leaders of developing countries to favor the views of technicians and specialists who see communication as a tool to achieve certain goals. They are talking about using journalism, using communication, to predetermined ends."

The information needs of the Third World are either forgotten or are given very short shrift.

Although Dr. Fisher's evaluation is accurate, his inferential criticism and apprehensions are misplaced. There is nothing Machiavellian or alarming in developing countries' desire to use communication for furthering economic and social development. The problem arises when the distinction between development communication (primarily a government activity planned and carried out as part of a country's national development program) and the news media (whose effectiveness as a DSC component is inversely related to the degree of government intervention) is blurred. To most Third World leaders, information and communication are synonymous and interchangeable; hence, both are subject to government influence and direction.

Some of the more extreme proposals for media control, such as those calling for "the imprisonment of foreign correspondents who insult or misrepresent host countries" or "licensing of journalists" are merely a reflection of the tremendous frustration which Third World leaders feel about domestic as well as foreign media. It is not difficult to understand. After all, it was not very long ago that some of the top government leaders in a major Western country, besieged by unrelentingly critical media, were questioning the credentials of nationally-known news commentators to analyze and criticize government actions in the name of the general public.

This is not to minimize the danger, in my personal view, of the growing trend in the Third World toward direct government control of news media. The danger is accentuated by the need for government

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When Third World leaders criticize the Western press for biased and distorted reporting, they are not questioning the factual accuracy of Western news agencies.

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subsidy of a national news agency, particularly in the first few years of its operation, in developing countries. But a government-subsidized agency does not necessarily have to be government-controlled. The possibility, as well as the level, of official intervention in the operations of a news agency depends very much on the political philosophy and survival needs of those in power. There is also the fear that a national news agency, in the absence of competition, may willy-nilly become a purveyor of official news. To some extent, it is a justifiable apprehension, but it need not always come true. After all, most developed countries, including Britain and France, have only one national news agency covering the domestic scene, but nobody accuses them of being official spokesmen.

Few developing countries will agree with the statement attributed to an African diplomat in Nairobi that "we do not want Western journalists in our countries. They should take their news from us." Among those who advocate the institution of a code of social conduct and professional responsibility for news correspondents and call for establishment of a Third World news agency, many are quick to disown any idea of government control over the media. Many others defend the need for such government control "only at the present stage of their national development" and "to check the externally-funded forces of political and social disequilibrium."

"We are not," says Somavia, who is an ardent critic of the Western media, "advocating government control over the agencies' news flow. We are against the ethnocentric monopoly of news flows." The same view is voiced by Chakravarti Raghavan, former chief editor of the Press Trust of India, who contends that national news agencies and the proposed Third World news agency should be "free of governmental or bureaucratic control, direct or indirect . . . [and should be run] professionally in such a manner that they evoke respect for their professional competence, integrity and credibility. They should not be vehicles of propaganda."

A vital element favoring the ultimate evolution of an independent Third World news agency is the heterogeneous nature of the Third World group. They do not constitute a monolithic, ideological bloc. Developing countries suffer from mutual rivalries, political as well as economic. In such an environment, a multinational Third World news agency, not free from government intervention, will founder because of conflicting national pressures. It will not succeed because governments will be adverse to using or propagating material put out by an international agency which is nothing more than a vehicle for distributing official handouts across the border.

Western countries and communication media can be of immense help not only by providing equipment for national news agencies in developing countries but also by assisting them in working out a mechanism for a freer exchange of information about each other. Perhaps a team of media experts (journalists and not professional communicators or government officials) from developing countries could be set up to prepare a model, together with a charter of duties and responsibilities, of the proposed Third World news agency. Organizations such as the Press Foundation of Asia could be assisted in training development journalists and in instituting seminars and workshops for senior-level news personnel to bring home to them the need for assigning necessary weight to development factors in grading day-to-day news. Journalism schools in Western countries could also be persuaded to include development news in their curricula and training programs.

Once the Third World countries are convinced that their information needs are being met by Western as well as by national and the proposed Third World news agencies, their antagonism toward journalists, both domestic and foreign, may soften into a reluctant tolerance. Only then are the developing countries likely to be more receptive to considering alternatives to the deferred proposal on mass media. Then too will they be in a better mood to cooperate in working out a declaration, for presentation to the biennial UNESCO General Conference in 1978, which will provide for a "free flow" of news not only with a Western but a Third World perspective as well.

Narinder Aggarwala, an Indian journalist, is working with the United Nations Development Programme as Regional Information Officer for Asia and the Pacific. This article originally appeared in The Interdependent.

Training for Trainers

What happens when the traditional academic format is abandoned in favor of a participatory workshop? According to J.G. Bird of Hawkesbury Agricultural College, the Graduate Diploma in Extension was designed to find out.

Those interested in this program for the development of professionals who are themselves concerned with staff training should contact Robert Macadam, Hawkesbury Agricultural College, Richmond, N.S.W. 2753, Australia.

Case Studies on Radio

The World Bank has just released *Radio for Education and Development: Case Studies*, two volumes on the use of radio in development. The compendium contains case studies of projects and general papers on planning radio's use. The reviews, many of which were previously published, cover projects that involve in-school education, non-formal education, and interactive development communication. In addition, a paper on technical and economic considerations in planning radio projects is included.

Part One, "Radio for In-School Education," contains articles on the Radio Mathematics Project in Nicaragua, the Mexican radio schools of Tarahumara, and the Mexican Radio Primaria Project. One article discusses a planning study of the potential of radio's use in Indonesia and discusses how studies can best utilize evaluative information.

The second section of Volume One, "Radio for Distance Learning," describes teacher training through radio and correspondence in Kenya and the Radio Santa Maria Model in the Dominican Republic.

Volume Two begins with five chapters on radio for non-formal education. Case studies of the radio movement in the Honduras, the Tanzanian National Radio Study campaigns, and Senegal's radio pilot project are followed by two chapters on open-broadcast educational radio and radio forums. Two papers on radio as used in development communications cover radio use in the Canadian North and interactive radio for health care and education in Alaska. The final chapter of Volume Two discusses technical and economic factors in planning radio services. The various options available are presented in light of specific goals (effects on radio audience, development objectives, etc.), constraints, and other variables.

Radio for Education and Development: Case Studies provides all interested in employing radio with timely facts and a sound overview of the field. Reprints of individual papers may be obtained by writing Dean Jamison, The World Bank, 1818 H Street, N.W., Wash., D.C. 20433. ■ A.G.

Folk Opera

Emmanuel Tettey of the Ghana Broadcasting Division advocates using opera to educate rural audiences in Ghana and other countries. Noting that storytelling is a "fundamental form of dramatic pastime found in every village," Mr. Tettey suggests that the same techniques developed to teach children morals and tribal traditions could be used to educate the masses, especially illiterates. "The talented storyteller . . . mimics, sings and dances around the fire to entertain (the children) before they go to sleep . . . The children participate in these songs and dances and in time grow to take over from the old storyteller.

Tettey also notes that folk opera, even in as simple a form as storytelling, can serve as a forum for public opinion. Referring to the European composers of the 19th century who used opera to expound their ideas of humanism and to urge the masses to fight for justice and happiness, Tettey declares that "the democratic nature of opera and its ability to portray the most varied aspects of life . . . could contribute immensely towards the education of children as well as adults." ■ Nancy Radtke

Satellite Report

Demand for communication satellite equipment in developing countries is the subject of a recent study prepared by Frost and Sullivan, an international market-research firm. The report points out that while commercial satellite communication was in its infancy ten years ago, satellites are now an accepted medium for international communication. By 1990, it says, satellites are likely to be used by many developing countries for domestic and regional communication.

The report's writers foresee the expansion of enthusiasm and uses for satellites, particularly for thin-route telephony and educational broadcasting. They anticipate that several hundred thousand community receivers (of 2-to-4 meters in diameter each) will be in operation in developing countries by 1990.

Frost and Sullivan's survey examines the demand for satellite communication equipment within 106 developing countries from 1976 to 1990. It provides a useful summary of the current status of international, regional, and domestic communication satellite projects and of planned and proposed applications (including the use of marine and aeronautical satellites).

The report does, however, contain some inaccuracies related to recent satellite activities — probably because the information available to the researchers was based on plans that were modified as they were implemented. Unfortunately, much of the information is undated, the assumptions on which calculations of national demands are based are not stated, no references are given, and some shortcomings in the market projections limit their usefulness.

This report does not identify communication requirements other than those that have been formulated into satellite proposals or plans, and its country-demand projections for community receivers appear rather arbitrary and optimistic. Moreover, the researchers assume that all planned and proposed satellites will become operational on schedule; in fact, some proposals may be withdrawn, delayed, or modified.

Prepared primarily for use by suppliers of space-related communication equipment, this report is available for $850 from Frost and Sullivan, 106 Fulton Street, New York, New York 10038. ■ Heather Hudson

Radio Mathematics Project Receives Japan Prize

Lesson 171 of the Nicaraguan Radio Mathematics Project took top honors in the radio division of the 11th Japan Prize International Educational Program Contest on March 1 in Tokyo. *Proyecto Mathematica por Radio* was one of 166 programs that 92 broadcasting organizations from around the world entered in the biennial NHK-sponsored competition.

The prize-winning project relies heavily upon active student involvement. No less than twice a minute the math broadcaster invites the elementary-school audience to sing, exercise, stand up, clap, or write on cue. These spot activities reinforce the subject matter and keep student interest from flagging. Simple and random, they also allow slow learners plenty of opportunities to join the group. Often, a child need only stand up to catch up.

Another striking feature of the Radio Math Project is its relatively low cost per student. A radio, teachers' guides, worksheets, and simple cost-free counting aids like bottle caps are all teachers need to convert conventional classrooms into radio classrooms. Some experimental classrooms have even dispensed with worksheets, using blackboard exercises instead, to further shave costs.

The Radio Mathematics Project was designed cooperatively by the Nicaraguan Ministry of Education and Stanford University's Institute for Mathematical Studies in the Social Sciences (IMSSS). With financial backing from the Technical Assistance Bureau of the U.S. Agency for International Development, the two set out in 1973 to upgrade and vitalize math instruction for first and second graders.

Preliminary results bode well for the future of Radio Mathematics. The students in radio classrooms seem to remain attentive for the full thirty minutes each radio lesson runs and to listen as raptly to the instructional segments as to the entertainment portions of each broadcast. In addition, two series of year-end tests showed that first-graders in classrooms in which radio programming was used in concert with related teacher-led activities learned more than their peers in traditional classrooms did.

The staff of the Radio Math Project intends to publish further findings at the end of each school year. A summary of the project's first two years of operation has already been released; *The Radio Mathematics Project: Nicaragua 1974-1975* by Barbara Searle, Jamesine Friend, and Patrick Suppes is available for $5.50 (including postage and handling) from the IMSSS, Ventura Hall, Stanford University, Stanford, California 93405. Further information can be obtained from Dr. Searle at the same address. ■ K.C.

SITE in India: High Learning Gains, Low Overhead

Professor Vijaya Mulay, Principal of the Indian Center for Educational Technology in New Delhi, and Professor Snehlata Shukla, her assistant, visited the Clearinghouse while in Washington in May.

They discussed the teacher-education program that their center developed to tie in with SITE. The following article was drawn largely from that interview.

On August 1, 1975, India began a unique experiment in development communication using the satellite, to date largely a commercial medium, to broadcast television in a variety of development projects. The NASA-launched ATS-6 satellite had been lent to India for one year to facilitate the Satellite Instructional Television Experiment (SITE).

Reaching 2,400 villages in six of India's 22 states, SITE was aimed from the outset at the country's hard-to-reach rural population. Thus, the areas selected for participation were some of the most backward. Many of the villages had no electricity, so battery-powered receivers had to be installed.

The objectives of the experiment were to test the country's ability to produce and utilize instructional television designed to cover agriculture, health, family planning, primary education, teacher training, and community development. All of the ground material — from electronic hardware to program software — was generated by the Indian people.

Anticipating the day when ATS-6 would be positioned over India, the Center for Educational Technology (CET) planned a program that would use the satellite to train teachers who would be involved in the year-long satellite experiment. A model using broadcast television was designed to improve the skills of primary school science teachers. Employed twice with success, it will be used again later this year. However, in the absence of satellite capacity, film will substitute for the broadcast component in villages not reached by national television.

In its first application, the program reached 24,000 teachers. Combining some established methods with some novel ones, it moved expertise outward in concentric waves from the educational technology center via a core of six highly skilled pedagogues. These educators trained 60 science resource people who in turn ran a series of eight or nine training camps in each of the six SITE states, versed groups of teacher-monitors in scientific methods, and introduced them to experiments. Finally, these teacher-monitors took up stations in each of the 2,400 teacher-training villages — during 15-day training sessions — to pass on a systematic approach to investigating and solving scientific problems. The monitors also encouraged rural teachers to conduct simple tests.

The CET decided on the program's objectives early and drew on the expertise of the National Center for Educational Research and Training to draw up a curriculum. Fourteen 22-minute television programs and printed supporting materials were subsequently produced.

The television programs formed the base of the five-hour training day. Teacher-monitors led discussions after the broadcasts to reinforce content and methodology. A subsequent two-and-a-half hours were given over to experimentation — emphasized because rural teachers, unfamiliar with experimentation, are reluctant to risk losing face by publicly carrying out experiments that could fail.

Feedback was an ancillary component of the SITE teacher-training model. Teacher comments were recorded and sent in to the broadcast center. Professionals edited their observations and broadcast them via radio during the training sessions.

According to Professors Mulay and Shukla, CET's effort was the first made in India to train teachers systematically by zeroing in on three overriding objectives — improving the content of science teaching, introducing the scientific method, and encouraging classroom experimentation. Those involved in the program made a concerted effort to show that the scientific method — described as observing the facts, framing a problem, systematizing knowledge, finding the possible causes and solutions to the problem, testing the possibilities, and coming to a solution — works in any setting. The two center directors recall seeing a teacher use a playground object to teach the international standard unit of measurement and hope to prompt Indian teachers to seize such everyday opportunities to enrich their instruction.

Professor Shukla's evaluation reports a 40-percent gain in teacher expertise — a combined score that reflects gains in knowledge of science and pedagogy. The report also shows that graduates are conducting more experiments and bringing more materials into their science classes — though many still do not adequately involve students in classroom experiments.

Some of the accomplishments of this approach to training rural teachers on site were hard bought, and the obstacles to success were many. Programs and materials had to be prepared in many languages. Power shut-downs interrupted progress and television succumbed to the rigors of heat, humidity, and dust. Then too, the villagers involved were dealing with sophisticated technology for the first time.

A planned follow-up to the training sessions will draw from the teachers not only their reactions to curriculum experiments, but also their suggestions for alterations. Since many teachers have contacted CET on their own, they are likely to cooperate in such a program. During the SITE project, even poorly paid rural teachers spent time and money mailing descriptions of their teaching problems and asking for the Center's help. The CET maintains contact with teachers who have gone through the training institute so that their feedback will enrich future programs. The Center also hopes to stimulate graduates of past programs to continue to sharpen their powers of observation and problem-solving.

The ATS-6 is the sixth and last in a series of American satellites designed to test, among other things, educational broadcasting to dispersed rural populations. Thus, it is an example of high technology whose use appears appropriate in certain areas and under certain circumstances in the developing world. Although the satellite itself is sophisticated and costly, it casts beams directly to individual television receivers equipped simply with enlarged antennas that consist of easy-to-make 10-foot discs of wire mesh. In addition, the ATS-6 carries a larger number of solar panels and generates a higher power signal than did earlier satellites. As a result, relatively simple and low-powered ground stations can receive its signal. The costs of such ground stations can be kept low. In India, each station cost an estimated $1,100.

Reports on the long-term effects of the SITE program are beginning to emerge, according to Professors Mulay and Shukla. The Center of Educational Research and Training will publish its findings on language development as well as on attitudes toward and behavior in school before, during, and after SITE. Other reports by anthropologists who took up residence in selected villages a few months before SITE and who stayed on several months after the end of the experiment will assess cultural changes brought on by the satellite experiment. Preliminary findings, for example, show changed patterns of interaction among castes: in order to be within eye-shot of the television screen, people from different castes who had never been at close proximity before sat next to one another. Records showed a 30-percent increase in children's attendance at school. During SITE, children saw educational programs during the morning hours. Adults, when polled, said they preferred instructional programming to entertainment. They said their after-work time is too valuable to spend on programs that teach them little.

When the satellite experiment ended in July of 1976, ATS-6 moved away from its station over India. In October, without the outreach potential of satellite communication, the model will reach a teacher-training target audience only one-fourth its former size — about 6,000 teachers. Continued testing and improvement of the present approach, however, is meant to evolve a more efficient system for use in 1980, when India hopes to launch its own satellite. ■ J.M.

Dilemmas (Continued)

battle to get a larger share of the national budget. Joint programs would have been difficult even to discuss in such a setting.

3. As political appointees, ministers were perpetually jockeying for power and competing for the President's favor. If the President showed no interest in the joint project, the ministers had no incentive to take political risks.

4. The proposed coordination might weaken the Minister of Education's authority and that of rural teachers working with agricultural agents.

5. The plan called for the cooperation of personnel from two different civil service systems with differing pay scales, work hours, and promotion policies.

6. Sharing educational TV resources would have intruded into the Ministry of Education's jurisdiction another echelon of Ministry of Agriculture TV-Programmers and production staff, which might have weakened the Ministry of Education's power. Moreover, responsibility for purchasing and repairing the TV sets would be hard to distribute between ministries.

7. The Minister did not seem to believe that primary education could be made to affect the quality of rural children's lives. As he no doubt saw it, the main purpose of primary schools was to discover at an early age those who could profit from further education (i.e., to identify future Einsteins) and to encourage them to migrate to the cities.

8. The Minister felt that combining adult rural centers with primary schools would create distractions in the classrooms.

9. The Minister foresaw major problems in having separate curricula for urban and rural children.

10. In rural areas, extension agents of the Ministry of Agriculture are usually better-established and more influential than school teachers. In a cooperative program, the extension agents might well come to dominate areas now under the jurisdiction of the Ministry of Education.

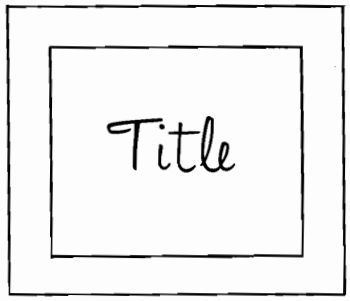
With some misgivings, the planning team did ultimately recommend that a non-integrated primary school project be approved. It was also able to elicit limited cooperation from the lower levels of the Ministry of Agriculture.

Thus schooled in the anatomy of a bureaucracy, the planning team arrived at three conclusions. First, in some countries the impetus for large-scale integrated programs must come from a level of government above that of the agencies in charge of the traditional sectors. Second, those evaluating future rural development projects must scrutinize the history of cooperation (or noncooperation) between agencies engaged in rural work. Last, the nature of bureaucracies, even those in technologically advanced countries, is such that coordination raises many real problems often unperceived by those who are too quick to extol the virtues of cooperation.

Cheap & Easy

TITLE SLIDES

This is a way to liven up your title slides when you don't have a photo studio or a graphics laboratory.



Materials Needed:

camera
tripod
color slide film
crayons (any or all colors)
iron or dry mount press
laminating film
white or colored paper
razor blade
lettering set

Lindy Layer

- Shave crayons onto paper. The thin pieces can form a shape or design. Use as many and whatever colors you like.
- Place laminating film over paper with crayon pieces.
- a. Place iron on top of laminating film and paper to melt crayons (the longer the heat remains, the farther the color will spread).
  b. Place in dry mount press for five seconds.

You now have a graphic. You can handletter onto the graphic or use stencils or press type, etc., to finish off your slide flat.

- Place graphic on floor or wall.
- Set up camera on tripod (Instamatics are fine as they are great cameras for close-up photos).
- Shoot graphic.
- Poof! A full color title slide!

U.P.A. 594 Logan Avenue, Toronto, Ontario, CANADA M4K3B8

Participatory Research Project

Key researchers involved in a project to investigate alternative methods of research in adult education will attend an August meeting sponsored by the International Council for Adult Education.

Budd Hall of ICAE outlines the objectives of the unconventional research effort as the identification of practical and theoretical problem areas, the production of guidelines for those interested in work of this kind, the analysis of experience and literature in this new field, and the extension of the theoretical framework within which such efforts will take place.

The primary objective, according to Hall, is to involve the poorest groups or classes in the analysis of their own needs. This goal was formed in response to strident criticism of social science research methods that place researchers in the roles of outside agents.

The informal research network, backed by funds from the Hazen Foundation, already includes 80-100 people who have volunteered to circulate materials to practitioners and to put other people in the field in touch with each other. Regional teams are now being formed in North America, Europe, Africa, Asia, and Latin America.

Contributions of materials, ideas, case studies, and reactions are invited. Write Budd L. Hall, ICAE, 252 Bloor Street West, Toronto, Canada M5S 1V6.

Development Communication Report, published quarterly by the Clearinghouse on Development Communication, is distributed free to over 5500 development professionals.

A center for materials and information on important applications of communication technology to development problems, the Clearinghouse is operated by the Academy for Educational Development, a nonprofit planning organization, and supported by the Technical Assistance Bureau of the U.S. Agency for International Development as part of its program in educational technology and development communication.

Readers are invited to submit typed manuscripts of no more than 1000 words and photographs.

Dilemmas in Country X: Candid discussions about failures

Second in a series of articles on what went wrong and why in specific development efforts, the following is a sketch of a high-level bureaucratic impasse that affected the work of a team of educational planners. A portrait of a stalemate that was skirted but never resolved, this "dilemma" was submitted by Dr. Howard Leavitt of the International Council on Education for Teaching (ICET) in Washington, D.C.

(The editor invites readers to submit reports for this column. Authors' names — as well as those of the people, agencies, and countries involved in the projects — will be withheld upon request.)

Should international funds be used to construct rural primary schools and programs in Country X? This was the question that a team of educational planners sought to answer in a small, less developed country where rural-urban migration and urban unemployment rates were high and where social services were seriously overtaxed.

This country's rural schools were plainly inadequate. Teachers were unqualified. Disintegrating one-and-two-room school buildings were dark and poorly ventilated. Rote-memory learning and an urban-oriented curriculum seemed ill-suited to rural life. Not surprisingly, in some schools the drop-out rate approached 100 percent by the third grade.

Why did parents bother to send their children to such schools? Of the many answers teachers and parents gave the planning team, the most common was "to give a child a fighting chance of moving to and succeeding in the city." Although most parents were realistic about the odds that their children would follow such a path, all had heard of academic miracles. Few parents could thus abandon the hope that their child would someday send money back to the farm or perhaps even pave the way for the whole family's move to the city.

Under such circumstances, the team wanted to find out whether building simple but modern primary schools, upgrading the skills of rural teachers, and providing a curriculum tailored to rural needs represented wise investments. Would, moreover, extending educational television to country schools prove feasible and cost-effective? Or would the use of TV simply speed up rural-urban migration?

The planning team knew that projects involving the construction of rural primary schools in other countries had met with mixed success. Such schools had turned out to be expensive to maintain and difficult to staff with good teachers. Then too, effective classroom materials had sometimes been hard to find. Worse, better attendance, increased enrollment, and a lower drop-out rate had often merely meant stepped-up migration to the city. But the government in Country X was being pressured to address the problems of rural development, and the Ministry of Education was consequently being pressed to improve and expand rural education.

Before attempting to answer the questions raised by this project, the planning team identified all the government-sponsored activities designed to improve rural life. It discovered that the Ministry of Agriculture was developing an ambitious plan to build a network of rural training centers at which adults and out-of-school youth would be taught such subjects as home economics, nutrition, the repair of farm implements, agriculture, and family-planning techniques. Such Centers would also serve as headquarters for an expanded corps of agricultural extension agents.

The advantages of linking the rural training centers to the primary school programs seemed obvious. With proper planning both might utilize the same building, the same equipment, and perhaps even the same demonstration gardens. In addition, new uses of educational television for adults might justify the inclusion of ETV sets in the primary school program. More important, the team thought, was the possibility that students would be less likely to leave the land when they could see that their parents were learning new ways of making rural life more satisfying.

The possibility of establishing a joint program was discussed with middle-level officials from the Ministries of Agriculture and Education, who, aware of the advantages of cooperation, were enthusiastic. But when the planning team presented a rough outline of the plan to the Minister of Education, he politely but firmly vetoed the idea. When pressed, he conceded that he and the Minister of Agriculture were political enemies and that undertaking a joint project would only exacerbate the already overwhelming problems of running a single Ministry. When the team protested that technical assistance could be provided to facilitate coordination, the Minister insisted that nothing short of a Presidential order would change his mind.

To find out why the Minister refused to cooperate, the planning team sought inside help from a sympathetic mid-level official at the Ministry of Education who knew personally both the Minister and the inner workings of the bureaucracy. Out of this dialogue came the following points:

1. The ministries in Country X are typically enough, as politically sensitive as they are unwieldy. The Minister of Education was speaking in the name of a ponderous, semi-autonomous organization over which he actually exerted only marginal control; he probably believed that meshing even a small part of his ministry with another would cause insuperable problems.

2. The Ministers of Education and Agriculture annually locked horns in the

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Development Communication Report

Clearinghouse on Development Communication

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Project Profiles, a series of brief descriptions of development projects that make systematic use of media, are available at no cost from the Clearinghouse. Produced in loose-leaf form, the two-page profiles are issued quarterly in sets of eight. A subscription to the series can be obtained by writing to Alexander Greeley at the Clearinghouse.

development communication report

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THE NUTRITION MESSAGE & THE MASS MEDIA

The three articles that follow are bound by two assumptions: that the mass media can play a key role in nutrition education and that their full potential will not be realized until project evaluation becomes more rigorous and more finely tuned to the part played by the media in development projects.

Mark Rasmuson traces the evolution of the use of mass media in nutrition-education programs. He describes three widely used media approaches, pinpointing their peculiar strengths and weaknesses. Joanne Leslie picks up where Rasmuson leaves off: she identifies the elements of a successful nutrition project and links them to the elements of a well-conducted evaluation. In a second article, she reviews five nutrition projects and their evaluations.

Together these articles constitute a solid exposition of the problems and the promise of mass-mediated education in the service of sector-specific goals. While the focus is on nutrition, the wider implications of the discussions are those that preoccupy all development and communication workers.

Three Media Strategies Used in Nutrition Education

Ninety-two percent of all health education programs in developing countries rely on face-to-face instruction, the American Public Health Association recently reported after conducting a worldwide survey of health and nutrition projects. Moreover, a majority — 59 percent — make some use of communication media. Few of these programs have been evaluated, and even fewer evaluated properly. Still, existing evidence reveals the limitations of face-to-face teaching, and suggests the contributions that communication media can make, whether used alone or combined with face-to-face methods.

Even the staunchest media-advocates recognize the value of face-to-face communication. But educational efforts based on personal encounters have intractable limitations. The most skilled and tireless of educators and facilitators cannot reach as many people with a particular message as can a billboard, to say nothing of a radio station. Quite simply, limited outreach means limited potential impact.

As the spread of mass communication media in developing countries made alternatives to face-to-face education possible, some nutrition-education experts embraced the mass media as teacher substitutes. The most common of the approaches in which interpersonal encounters play only a nominal role — approaches adopted on a wide scale in the early 1970's — have used several media at once.

(Continued on page 2)

Evaluating Nutrition-Education Projects — Getting the Message and Acting on It

The effectiveness of all mass media health-education projects should be evaluated in terms of four kinds of results: (1) outreach; (2) changes in knowledge and attitudes; (3) changes in behavior; and (4) changes in health status.* Most evaluations measure outreach, but changes in knowledge, attitude, and behavior are considered in only about half of all evaluations; and changes in health status are rarely measured. This state of affairs can be explained easily enough: while outreach can be measured after the fact, changes in knowledge, dietary behavior, and health status can only be assessed if baseline information has been gathered; and most mass media nutrition-education projects fail to incorporate an adequate research component.

Outreach, more familiar to advertisers and communicators than to educators since it is not a factor in interpersonal education, can be measured both in terms of its potential size and its actual size. For example, potential size can be measured by finding out how many people subscribe to a newspaper that carries educational messages or determining how many radio-owners live in the catchment area of a radio station that airs educational messages. In contrast, a more precise measure is an awareness survey in which a random sample is interviewed to determine what fraction of the potential audience remembers having seen or heard a particular educational message. A measure such as an awareness survey helps evaluators determine the per person costs of an educational effort.

Formal or institutionalized education has usually been evaluated by measuring changes in knowledge — a method many researchers consider a sufficient gauge of effectiveness. More recently, measuring changes in the affective domain (such as attitude changes) has also become a part of some educational research efforts. However, most educators, particularly those involved in nonformal adult education, believe that the educational message will affect behavior in a way that benefits the individual or the community.

Evaluation of behavioral changes is particularly important to those who fund educational efforts. Often the funds for nutrition education come out of health or agricultural budgets, rather than out of the education budget. In such cases, numerous schemes for improving nutritional status or agricultural productivity compete for available funds, and those who apportion funds want to know as precisely as possible what their money will buy.

In some nutrition-education projects, behavioral changes can be measured directly. For example, the number of new

(Continued on page 3)

**For an analysis of costs, another critical component of any full evaluation, see "The Cost of Instructional Radio and Television for Developing Countries" by Dean Jamison with Steven Klees,* AID Studies in Educational Technology, *Academy for Educational Development.*

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Supported by the Technical Assistance Bureau of the U.S. Agency for International Development

Three Strategies (Continued)

The Multi-Media Approach

Under the multi-media approach, messages are usually broadcast by radio and reinforced by similar messages carried in the press, on posters and billboards, and through such traditional channels as minstrel and puppet shows.

A one-year program conducted by CARE in the Republic of Korea in 1970, for example, broadcast nutrition information over radio as songs, jingles, and brief dramas. At the same time, it dispensed calendars, posters, comic books, and food charts to the radio listeners. A follow-up study of the Korean program revealed that approximately 53 percent of those questioned could recall the advice contained in the messages and that about 20 percent could state the specific nutrients in each of the food groups (information stressed in the campaign).

As the use of the mass communication media spread through developing countries, some nutrition-education experts embraced the media as teacher substitutes.

Another mass media campaign sponsored by CARE, this one in India in 1972, used radio, newspaper advertisements, posters, comic books, wall paintings, mime shows, and other media to carry both positive and negative messages on the nutritional requirements of pregnant women, on weaning practices, and on general nutrition. CARE reported increases of 32 percent (from 58 to 90 percent) in public awareness with respect to messages related to pregnancy. The percentage of those knowledgeable about weaning practices rose from 59 to 93 percent, and awareness of general nutritional matters rose from 72 to 96 percent during the ten-week campaign.

The results of studies such as the ones just mentioned are, of course, open to question. In particular, objections have often been raised regarding the lack of methodological rigor with which evaluations are conducted. In the Korean Project, for example, the true impact of the campaign could not be known, since no baseline survey of the audience's knowledge was conducted. Another objection involves the lack of research on the length of time that new knowledge was retained after the campaign's end. An even more basic limitation of the evaluations of both the CARE projects was their failure to move beyond the measurement of knowledge acquisition and into the measurement of changes in food-related behavior.

The true impact of a campaign cannot be gauged unless a baseline survey of the audience's knowledge is conducted.

The Advertising Approach

Explicit changes in behavior *are* the object of the newest and most widely touted of the media-alone methods — the advertising or social marketing approach, which utilizes techniques of commercial-marketing communications to promulgate nutrition messages. As used in developing countries, the advertising approach has relied primarily upon the motivating power of broadcast media (usually radio) to carry short specific messages that are frequently repeated over long periods.

Of key importance in the advertising approach is the development and pretesting of messages. This emphasis reflects an increasing recognition that food habits probably cannot be changed by simply teaching nutrition as nutrition, by merely presenting the basic facts of the science of nutrition. As proponents of the advertising approach are quick to point out, such changes have usually resulted from non-nutritional motivation, such as the desire for higher economic or social status. The CARE-India study just cited implied that arousing some fear (by saying, for instance, that "Your children's future is in danger unless from the age of six months you feed them solid food) may induce change more effectively than positive persuasive messages can. Nutrition educators are thus increasingly being advised to formulate themes and messages that identify economic and other benefits to the potential adopters and that play on universal human needs, such as survival and relief from suffering.

"Selling" nutrition is not as simple as selling soap.

An early large-scale test of the advertising approach in nutrition education was conducted in two regions of Ecuador in 1974. Evaluators found that the target audience significantly increased its use of iodized salt. The audience also adopted new attitudes toward protein-energy malnutrition, premature departure from breastfeeding, unsanitary drinking water, diarrhea and other intestinal problems, and parasites; and it put into practice new techniques for avoiding these menaces.

More recently, attitudinal and behavioral changes following an advertising project conducted in the Philippines have been reported. The percentages of mothers who thought that adding oil, fish, or vegetables to infant porridge benefitted the child were reported to have increased substantially. The percentage of those who came to value oil rose from 15 to 74 percent, while the portion who understood the nutritional importance of fish and vegetables rose from about 50 to about 80 percent (from baseline to post-test surveys). The percentages of mothers actually adding these supplements to infant food were reported to have increased from 0 to 24 percent (oil), 17 to 27 percent (fish), and 5 to 15 percent (vegetables).

Experience from these projects has revealed that "selling" nutrition is not as simple as selling soap. Nutritional campaigns attempt to change basic behavior, not merely to influence preferences. They must thus be created with culture-specific food imagery and beliefs in mind. Indeed, within a single country, wide differences in opinion, language, culture, and religion may hamper effective mass communication.

Nutrition messages should be few in number, easy to understand, and repeated frequently.

Like commercial advertising, however, nutrition advertising should utilize economic and social incentives to induce change. As they are in commercial advertising, nutrition messages should be few in number, easily understood, and repeated frequently over the media used by the target population.

Combined Approaches

Just as the discovery of the central weakness of the face-to-face approach (limited outreach and impact) has prompted nutrition educators to experiment with the media, the discovery of the central weakness of the media-alone approach (lack of reinforcement) has created interest in combining the two earlier approaches.

In Project Poshak, several media were used to support interpersonal instruction. Carried out in more than 500 villages in Madhya Pradesh in India, this nutrition-education project employed three types of communication: mass media, face-to-face instruction (supported by flipcharts and child-growth charts), and a nutrition rehabilitation program (conducted at rural health centers for severely malnourished children).

At the conclusion of the Poshak program, the behavior and attitudes of the participants and, in some cases, of the entire community were examined for changes inspired by the project. Among the changes ascribed to the program were (1) an increase in awareness among

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mothers and medical personnel of the need for giving young infants solid foods, and (2) increases of attentiveness among participating parents of rehabilitated children to the food needs of their young. The coordinated use of interpersonal and mediated instruction made measuring the relative efficacy of each mode impossible. Nonetheless, reinforcement through repetition appeared to reduce discrepancies between messages, and to provide a smooth flow of information to the intended audience.

Other programs based on hybrid approaches have employed the radio forum, whereby broadcasts to organized listening groups are followed by discussions of the new ideas and the formulation of plans to implement them. The most notable example of the radio forum is probably Tanzania's "Food Is Life" campaign launched by the government in 1975. Planned as a sequel to a similar campaign on health practices carried out in 1973, the program was designed (1) to raise the public's level of knowledge about the nutritional value of foods and about ways to obtain a balanced diet on a limited budget, (2) to eliminate food taboos and unhealthy food habits, (3) to promote the use of sound farming methods to increase food production, and (4) to foster cooperation in solving communal problems.

Preliminary reports on the Tanzanian effort show that consciousness of the need for stepped-up food production has increased, that more people now have vegetable gardens and poultry of their own, that dietary habits have improved, that day-care centers for infants have been created, and that certain traditional taboos have lost their grip. *(Compare Joanne Leslies' article on page 4.)*

Conclusion

The approaches to nutrition education surveyed above constitute a powerful set of tools for future efforts. However, the relative utility of each approach, and the situations to which each applies, cannot be determined with precision at present.

Methods of evaluating both effectiveness and cost must be developed and applied to projects exemplifying various approaches. In this effort, a greater degree of methodological rigor is called for than has been evident in past evaluations. Only when this is done will it be possible to pass judgment on the range of approaches to nutrition education that have emerged in recent years.

■ *Mark Rasmuson is presently doing research at the East-West Center in Hawaii, where he has received a degree-study award.* *The research on nutrition education from which his article is drawn was supported by the Office of Education and Human Resources and the Office of Nutrition of the Technical Assistance Bureau of the U.S. Agency for International Development. Further information on this research can be obtained from Dr. Anthony Meyer at TAB/EHR/AID.*

Evaluating (Continued)

wells dug or new vegetable gardens planted can be counted fairly easily, and increases in purchases of a certain food or in the number of sacks of wheat ground at a mill are simple enough to calculate. Most nutrition-education projects, however, aim at altering domestic feeding behavior. But, since weighing and recording one person's intake for one day — to say nothing of a family's consumption for a month — is an expensive and time-consuming task, nutrition researchers tend to rely on indirect measures of dietary behavior. Typically, they use the recall of food consumed over the previous 24-hour period.

Although sanctioned by widespread use, the 24-hour food-recall method produces unreliable data. Both the conscious understatement or exaggeration of food consumption and incomplete recall undermine the validity and usefulness of this method. However, as the authors of the USAID field guide for evaluation of nutrition education point out in their defense of the 24-hour food-recall method, researchers who try to measure food intake directly often alter the normal dietary behavior of the people under study.

The methodological problems associated with measuring dietary behavior await solutions that may be long in coming. However, evaluations of nutrition-education projects could be strengthened were they to rely less heavily on a single outcome.

Specifically, inferences about changes in food consumption drawn from 24-hour food-recall data should be corroborated by records of changes in health status wherever possible. Morbidity and mortality statistics are appropriate indicators of health status at the community, regional, or national levels. Changes in individual health status can be determined by anthropometric measurements (height and weight) as well as by personal disease histories.

A mass media nutrition-education project can most convincingly be claimed to be effective if it can be shown that:

(1) As a result of a nutrition education message disseminated by the media, people increase their knowledge of or change their attitude toward one or more foods;

(2) As a result of this change in attitude or knowledge, the target audience purchases or produces more or less of this food;

(3) As a result of this change in availability, families or individuals consume more or less of the food; and

(4) As a result of this increased or decreased consumption, the nutritional status of individuals or the community improves. *(See page 4.)*

■ *Joanne Leslie, a graduate student in the Johns Hopkins University Department of International Health, works for EDUTEL Communications and Development, Inc.* *The research on which these articles were based is written up in a longer report that is available from the author.*

Nutrition Planning Information Service

Community Systems Foundation has announced the formation of the Nutrition Planning Information Service. This information service is a systematic attempt to disseminate new developments in the field of nutrition planning to researchers and practitioners worldwide.

A quarterly journal, Nutrition Planning will supply two resources to readers: abstracts of recent studies, and access to full-text copies of all studies abstracted. Unlike most abstracting publications, which depend exclusively on previously published materials, Nutrition Planning actively solicits unpublished "ephemeral literature" which suggests promising research or implementation strategies, but may not yet be in final form. The aim is to cut lag time between discovery and dissemination.

Materials drawn from more than 50 countries will be selected by editor Barton R. Burkhalter, nutrition planner with experience in the U.S., Latin America and the Far East. He will be assisted by an Editorial Advisory Board of 20 senior members of the field. Start-up costs are borne by a grant from the Office of Nutrition, Agency for International Development.

Those who would like to become affiliated with the Nutrition Planning Information Service by contributing documents, and those who would like to receive a complimentary copy of the first issue of Nutrition Planning (scheduled for publication in October, 1977) may contact Dr. Burkhalter at Community Systems Foundation, 1130 Hill Street, Ann Arbor, Michigan 48104. ■ *This notice originally appeared in* TAICH News, *a publication of the Technical Assistance Information Clearing House in New York.*

Five Nutrition Projects That Use Mass Media

Several recent international conferences have considered the role of mass media in health and nutrition education. The Interagency Meeting on Applied Nutrition Research, which was convened in Rome in October of 1975, identified nutrition education as one of eleven priority research areas. In particular, delegates to that meeting discussed the need to develop methodologies for the use of mass communication media.

However, before further research is conducted, what has already been learned about mediated health education should be synthesized. As a preliminary step in that direction, this article reports on the evaluations of five community-education projects, each of which uses the media to teach nutrition in low-income countries.

The Trinidad and Tobago Breastfeeding Campaign

In June 1974, the Housewives Association of Trinidad and Tobago (HATT) launched a mass media campaign to encourage breastfeeding. HATT received assistance from the Association of Advertising Agencies of Trinidad and Tobago (AAA), two broadcasting stations, three daily newspapers, and one weekly newspaper.

The campaign objectives were to increase the whole population's awareness of the desirability of human milk as an infant food and to provide prospective mothers with accurate information on which to base their decision whether to breastfeed.

According to a brief prepared by the HATT for the AAA, recent surveys have shown that the percentage of Caribbean women who breastfeed has declined since 1975 and that a high level of gastroenteritis and an increasing incidence of protein-energy malnutrition may be attributable to this decline in breastfeeding. Thus, if the campaign were to be successful in reversing this trend, some decrease in gastroenteritis and protein-energy malnutrition could be expected. Unfortunately, however, the description of this project delivered at the Caribbean Food and Nutrition Institute's technical group meeting on "Nutrition and the Mass Media" did not include information on changes in the incidence of these diseases.

The primary media used in the six-week campaign were radio, newspapers, and posters. The total radio time on the two stations amounted to about two hours, with each spot lasting 15 or 20 seconds. Five newspaper advertisements were published a total of 18 times by the four newspapers. Television support was also enlisted, and some interpersonal education took place at health clinics, secondary schools, PTA's, and church groups.

Miguel Gueri, medical nutritionist at CFNI, evaluated the campaign. As a sample for the evaluation, he chose women who had normal deliveries at the Port-of-Spain General Hospital during the six weeks immediately following the end of the campaign. The evaluators interviewed 418 mothers during the first 48 hours after the women delivered and 348 of these women were interviewed again four months later. The team measured changes in knowledge and behavior against women's reports on how they had fed their older children as babies.

Of the roughly two-thirds of the women interviewed in the hospital who already had at least one child, 88 percent of the mothers had breastfed the previous child, but 44 percent of these breastfeeders discontinued the practice before their infants were four months old. According to Gueri's 1975 report, only 11 women started bottle feeding because they had to work, while 36 percent reported that they gave bottles because they had insufficient mother's milk. During these hospital interviews, 95 percent of the women said that they intended to breastfeed, but only 3 percent believed that breast milk alone would suffice for the first six months.

At the time of the hospital interviews, the mothers were not asked about the mass media campaign. But at the second interview, 85 percent recognized replays of the radio ads. Sixteen percent of the mothers (55 in all) had started working within four months of giving birth, but only 6 percent initiated bottle feeding solely because they started working. Forty-one percent of the mothers had completely discontinued breastfeeding, and of those who were still breastfeeding, 97 percent were supplementing mother's milk with bottle feeding slightly later than those who had lower recognition scores.

Advertising Technique Mass Media Nutrition Education

In this project, radio and posters were used to promote specific nutrition objectives in two Ecuadorian Provinces, Imbabura Province in the highlands and Manabi Province on the coast. The project was designed, implemented, and evaluated by a U.S. marketing agency and was funded by USAID. The Ecuadorian National Institute of Nutrition and the Nutrition Division of the Ecuadorian Ministry of Health chose the target areas and the message subjects.

For the 15-month campaign (February 1974-April 1975), radio was the major medium. This choice was made because almost all parts of the target provinces are reached by two or three stations, and few of the local stations run commercially sponsored projects except at peak hours. Moreover, as information gathered in the course of the project showed, 83 percent of all who lived in Manabi, 95 percent of *mestizos* in Imbabura, and 64 percent of Indians in Imbabura had access to a working radio. (Television, on the other hand, is primarily an urban medium in Ecuador, while newspaper distribution is limited and the literacy level of the target populations is low.)

Prerecorded spots were broadcast ten times a day over most of the area's 30 local radio stations. In Manabi Province, some television and cinema spots were used to reinforce the radio messages. Twenty thousand posters carrying the same message were printed and used in both provinces, but no record of the distribution of the posters was kept.

Five main nutritional problems were addressed in this campaign: protein-energy-malnutrition; unsanitary drinking water; parasites, diarrhea and other intestinal problems; iodine deficiency (only in Imbabura Province); and early cessation in breastfeeding (only in Manabi Province).

The campaign's overall objective was not only to increase the knowledge of the target groups concerning these problems and their solutions, but also to effect specific behavioral changes. An important feature of this campaign — and of subsequent nutrition education campaigns in the Philippines, Nicaragua, and the Dominican Republic by the same firm — is that the messages never motivate the listeners to take actions for which their resources are too limited.

The standard methodology for measuring advertising effectiveness — an awareness, attitude, and behavior tracking study — was used to evaluate the campaign. In all, three surveys were conducted over a 15-month period. In addition, the commercial shipment of iodized salt into Imbabura Province was measured, since the campaign stressed the importance of consuming iodized salt.

The first survey was conducted in February of 1974 before broadcasting began. Subsequent surveys were conducted in November of 1974 and in May of 1975. Typical interviews lasted 15 to 20 minutes and consisted of approximately 70 questions on health and food habits, media habits, and demographics. The evaluation team found that knowledge of legumes as a protein source increased an average of 45 percent among those who were aware of having heard the messages and an average of 25 percent among those who were not. The evaluators contend that the significant increases in knowledge among those who claimed to be unaware of the messages reflect the multiplier effect: those who heard the messages might have passed on the information to friends without necessarily indicating the source.

Before the broadcasts began, only 30 percent of those interviewed in Manabi Province thought that mother's milk was the best food for infants, while 47 percent believed that fresh cow's milk was best, and 16 percent thought that powdered

milk was most desirable. By the time of the third survey, the fraction that thought mother's milk was best had increased to 73 percent among those unaware of the messages.

The effort in Imbabura Province to increase use of iodized salt was evaluated in two ways. Among the *mestizos,* most of whom already used refined salt, an increase from 5 percent (at survey 1) to 98 percent (at survey 3) was reported. Among the Indians, many more of whom initially used coarse salt, an increase of from 17 percent to 68 percent in total use of refined salt and an increase from 5 percent to 54 percent in use of iodized salt was reported. While researchers felt that some of the Indians believed that all refined salt was iodized salt, the reported increase in use of iodized salt in Imbabura Province was confirmed by shipment data from the local salt company.

These changes may have been quite transitory: the frequency of message broadcasting decreased during the second half of the campaign, and this decrease may have accounted for the fact that smaller gains were measured between surveys 2 and 3 than between surveys 1 and 2. However, at a minimum, this campaign seems to have successfully brought about short-term changes in knowledge and behavior.

The SUNAB Project

One of the many responsibilities of the Brazilian Ministry of Agriculture is to provide nutrition education as part of its programs to monitor and manage the flow of food within the country. Within the National Superintendency of Provisioning (SUNAB), the agency concerned with nutrition education, is DEAL (Departmento de Assistencia e Educação Alimentar), which uses mass media (including radio, newspapers, billboards, and leaflets) to educate the public.

DEAL's health objective is to provide people with accurate information on nutrition and to encourage them to consume nutritionally valuable foods. At the same time, the foods emphasized at any given moment are those in relative abundance, and the substitution of nutritionally equivalent foods for scarce foods is encouraged. Thus, the SUNAB project is particularly interesting because its objectives fall between those of health educators and those of commercial advertisers.

Between February of 1974 and February of 1975, SUNAB's nutrition education work in the state of Espirito Santo was one of three projects evaluated by a SUNAB nutritionist working with researchers from a U.S. consulting company under contract to USAID to develop and test a field guide for evaluating nutrition-education projects.

The evaluation of the SUNAB program was combined with the evaluation of another nonformal nutrition-education project in Espirito Santo conducted by another branch of the Ministry of Agriculture, EMBRATER (the office of technical assistance and rural extension services). Although the SUNAB messages are primarily directed toward housewives, the target audience chosen for the combined evaluation consisted of people aged 15 to 25 because that population group held most interest for EMBRATER evaluators. Consequently, the effectiveness of SUNAB's educational efforts may have been understated.

About 300 youths were interviewed three times during the evaluation year. However, both educational programs were under way at the time of the first survey, and no planned or documented changes were made during the year, so the effectiveness of either program cannot be determined by changes in responses from one survey to the next.

The evaluation objectives of SUNAB personnel were limited to determining what fraction of the population knew of SUNAB's radio and newspaper messages, how often these messages were heard or read, and if these messages were considered useful. Changes in dietary behavior and the impact of the campaign on health status were not considered by the evaluators.

At both the first and second surveys, about 26 percent of the youths interviewed reported having heard the radio messages, and about 22 percent claimed to have read newspaper articles. However, during both surveys almost half of those who were aware of the messages reported having heard or read them fewer than two times a month. The only striking difference in responses between the first and second surveys was in the number of people who reported finding the messages useful — 13 percent at the time of the first survey and 73 percent by the second. (This finding is difficult to interpret since it was not clear if the content of the messages had changed between surveys.)

One of the more straightforward ways to measure the effectiveness of SUNAB's efforts would be to see how the sales of a plentiful or scarce food changed after a message concerning use of that food was run, but no such evaluation seems to have been done.

The Tanzanian "Food is Life" Campaign

Tanzania has used radio extensively in its national development program, which consists primarily of single-topic campaigns. The most recent of such campaigns was the "Food is Life" campaign, a nutrition project carried out from June 2 through September 29 in 1975.

The target audience comprised all Tanzanian adults. But since Tanzania's national development has emphasized rural development, rural adults were the main targets. Since many of the study groups grew out of functional literacy classes formed during and after Adult Education Year (1970), the nearly three million participants tended to be primarily new literates and did not represent a cross section of all Tanzanian adults.

Like the previous campaigns, the "Food is Life" campaign was designed to promote community discussion based on information disseminated by radio and print. However, in many regions, lacks of receivers, batteries, or good reception prevented listening groups from hearing the broadcasts.

Evaluation and implementation of the "Food is Life" campaign were primarily the responsibilities of local teachers and evaluators. However, experienced personnel from the Institute of Adult Education in Dar es Salaam did work closely with the local evaluators in the six wards chosen for evaluation.

In June of 1975, pretests were given to the six selected study groups before the campaign officially began. One pretest measured nutrition knowledge, and another was designed to gather information on the eating habits of the families of the study-groups' members. Other baseline information on the number of cases of protein-energy malnutrition was gathered from clinic records. These pretest data showed that food taboos, particularly those relating to sources of and rights to certain foods, were widespread.

While post-test results are still pending publication, qualitative evaluations suggest that as a result of the "Food is Life" campaign, some traditional taboos have been abandoned and that many vegetable gardens and poultry units were established. However, as J.M.M. Matiko notes, had the campaign not overlapped with other campaigns, more behavioral changes could perhaps have been measured.

CARE Mass Media Nutrition Education

From January 1 through December 31 of 1970, CARE (cooperating with the Korean Ministry of Health and funded by a grant from USAID) used radio and print in a nutrition-education program in Korea. The government broadcasting system, KBS, which reaches almost the entire country, agreed to provide time for two 30-second spots every day for the year. The nutrition messages centered around the identification of the five food groups and the need for balanced meals. In particular, the messages stressed the importance of providing sound diets for pregnant and lactating women and of introducing solid food into the diets of nursing infants.

Foods were grouped to identify (and thus to combat) major nutritional deficiencies in Korea. Small bony fish, which are eaten whole, were grouped together with milk products as main sources of calcium. Vegetables and fruits were placed in the

same category because they are eaten in Korea primarily as condiments, and because increased consumption of both was a campaign objective. Oils and butter were listed in a separate group, and an increased consumption of these was considered desirable to increase the population's utilization of Vitamin A. Consumption of a variety of complex carbohydrates in addition to rice was encouraged for both nutritional and economic reasons.

The basic printed material distributed to support the radio announcements was a colorful calendar illustrated with pictorial reminders of the five food groups and of the nutrition slogans. A poster campaign was also launched, but was dropped so its funds could be used to buy other printed materials (including a comic book and a pamphlet for housewives) that appeared to have greater impact. An estimated 75,000 calendars, pamphlets, and comic books were distributed.

During late 1970, the Korean Productivity Center conducted a CARE-sponsored evaluation in which 1,000 people were interviewed. Unfortunately, the evaluation of the radio component of the program, as reported by Margot Higgins and Joel Montague, was limited. The report states that of the persons interviewed, 92 percent of city dwellers and 87 percent of those who live in the provinces had heard the broadcasts or had heard others talk about them. Of these interviewees, 83 percent in the cities and 68 percent in the provinces remembered something of the message, especially of the two themes of "let us eat a balanced diet" and "let us eat minor cereals as well as rice."

Evaluation of the printed material, however, was fairly detailed. Evaluators compared those who received at least one of the printed materials, those who received no materials but who lived in a distribution area, and those who did not live in a distribution area.

The evaluation showed that the comic book achieved the most impressive dissemination. Eighty percent of all those interviewed had seen it or heard talk of it. Fifty-three percent of those interviewed remembered the advice about eating a balanced diet, and 20 percent could name specific nutrients in the five food groups. Higgins and Montague classified those interviewed by educational level and social class. They found that those with little education seemed to remember the nutrition messages even less well than those of a low economic level.

The Researchers' Imperative

The evaluations of these five projects suggest that the mass media can be used to bring about desirable changes in dietary behavior. At the same time, the summaries of these evaluations reveal some of the methodological gaps that nutrition researchers should strive to fill.

■ Joanne Leslie

On File at ERIC

ERIC (Educational Resources Information Center) is a federally funded information system that collects materials on all facets of education. Copies of many of the documents it collects can be purchased from EDRS (ERIC Documents Reproduction Center), either on 4 x 6 inch microfiche (each sheet of film carries up to 98 pages of text) or as a full-size photocopy of the original.

Documents available from EDRS can be ordered from ERIC Document Reproduction Center, P.O. Box 190, Arlington, VA 22210. Order by ED number and enclose payment for the price listed plus postage. For information about ERIC, indexes to ERIC documents, and other services, write ERIC Clearinghouse on Information Resources, School of Education, Syracuse University, Syracuse, NY 13210.

Some recent entries in the ERIC files of special interest to *DCR* readers are listed below:

- Charconnet, Marie-George. *Development of Educational Methods and Techniques Adapted to the Specific Conditions of the Developing Countries. Peer Tutoring: Operational Description of Various Systems and Their Applications.* Paris, France: UNESCO, 1975, 72 pages (ED 136 776).

  Various patterns of peer tutoring are described and a dozen systems are documented (e.g., "Petites Ecoles," "Keller Plan," "Madras System"). It is concluded that peer tutoring is a flexible method, adaptable to different educational situations, every educational level, and highly varied sociocultural environments; it is thought to be a valid solution to certain problems in educational development in developing countries. — Available from EDRS in microfiche only for 83¢ plus postage; photocopy is not available.

- Lourie, S. *Design of a Regional Education Plan.* An illustration: Informal Education in the Highlands of *Guatemala. IIEP Seminar Paper: 15.* Paris, France: UNESCO, 1975, 23 pages (ED 133 860).

  The program described is intended to use informal and formal education to bring literacy to the largely poor and illiterate rural population of the highlands of Guatemala. Included is an analysis of the design stage and organizational structure of the plan, which uses parts of the existing governmental structure. — Available from IIEP Publications, 7-9 rue Eugene-Delacroix, 75016, Paris, France (3.00 francs). Available from EDRS in microfiche only for 83¢ plus postage.

- *Video Tape Recording and Film: Description and Comparison with a View to Their Application in Audio-Visual Programs in Bangladesh.* New York: Asia Foundation, 1975, 48 pages (ED 124 111).

  Advantages, limitations, and liabilities of videotape recording, 8 and 16mm systems are compared with special consideration given to their use in tropical conditions. Discussion includes a comparison of three systems and technical operations, and covers the precautions necessary to insure proper functioning. Cost estimates on equipment, a list of repair facilities in Bangladesh, and information sources on media appear in the appendices. — Available from EDRS in microfiche for 83¢, in photocopy for $2.06, both prices plus postage.

- *Exploring New Directions in Teacher Education. Experiments in the Preparation and Training of Teachers in Asia.* Bangkok, Thailand: Asian Centre of Educational Innovation for Development and UNESCO, 1976, 251 pages (ED 134 547).

  Twenty case studies of experiments carried out in Asian nations in response to local problems in teacher education are organized into three basic subject areas: linking teacher education to national development tasks; linking teacher education to efforts to equalize educational opportunities; and institutional and professional development in teacher education. Nations represented are India, the Philippines, Thailand, Nepal, Iran, Korea, Singapore, Malaysia, and Japan. — Available from UNESCO Regional Office for Education in Asia, Box 1425, Bangkok 11, Thailand ($10.50). This document is not available from EDRS.

■ **Barbara B. Minor, Publications Coordinator, ERIC Clearinghouse on Information Resources**

Portable microfiche readers that can be adapted for 220 current are available for less than $100, while a typical full-size desk-top model costs about $250, and more elaborate models cost over $1,000. Reader-printers, which can be used to produce hard copy, cost about $1,500. For details, contact either Barbara Minor or the Clearinghouse on Development Communication.

Two-Way Radio — One Way To Health

The Appropriate Technology Department of the University of Wisconsin is heading up a project to develop inexpensive two-way radio equipment for use in health care programs.

According to project director Ned Wallace, recent World Health Organization publications have affirmed the importance of two-way communication within rural health programs in developing countries. WHO found that the few regions that have radio networks using Single Sideband High Frequency (HF) equipment have upgraded health services markedly. Its reports show that the use of HF equipment in an efficiently run operation enhances administrative capacity, patient care, teaching, and planning.

Two-way radio is the only practical communication medium where telephones are unreliable and where transportation is costly and difficult, says Dr. Wallace. But the high cost of commercial two-way radios impedes the development of regional or national radio networks.

Interested individuals and institutions with experience in the design and field testing of communication equipment and use should contact Dr. Wallace at 610 Walnut Street, Madison, Wisconsin 53706.

Call For Copy

The next issue of *Development Communication Report* will focus on the use of the rural press and print materials in development efforts. The rural or community newspaper as used in literacy programs in Third World countries will receive special attention.

Readers with intimate first-hand knowledge of projects involving the rural press are invited to submit copy and comments to the editor no later than November 10.

Trade Secrets

The innovative use of all types of news media — from flannelboards to satellite television programming — is the subject of a project currently being undertaken for the U.S. Agency for International Development by James W. Brown, Professor of Instructional Technology at San Jose State University. The study will emphasize uses of such media in poor rural environments in Latin America.

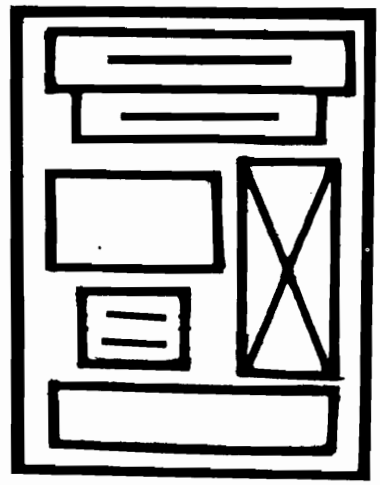
The project is designed to create a well organized, cross-referenced inventory of case reports, together with an analysis of the principal conclusions to be drawn from them. Individuals and organizations interested in supplying copies of reports suitable for inclusion in the collection or who may wish to obtain a copy of the completed report may write to Dr. Brown at 1678 Sweetbriar Drive, San Jose, California 92125 or call (415) 269-0632.

Cheap & Easy LAYOUT AD TRACING

Lindy Layer

For those of you who do layouts, here is an easy way to get ideas. Professional layout is expensive and takes time — this is FREE and fast.

Look through magazines and study the ads. When you find one you like, place a sheet of paper over it and trace the blocks you see.



You now have a basic layout to use as is or to work from and modify.

- Thanks to all of you who have written regarding the book. It is taking shape and should be finished by the time the next issue of *DCR* comes out. I have been exploring ways to reproduce it cheaply so I can mail it overseas and make sure it receives maximum exposure.
- Correction: in the last issue, the final steps should have read "a or b" — *either* does the trick.

U.P.A. 594 Logan Avenue, Toronto, Ontario, CANADA M4K3B8

Telecommunications Policy Report

The Center for Northern Educational Research at the University of Alaska has published a 26-page report, "ATS-6 and State Telecommunication policy for Rural Alaska: An Analysis of Recommendations," for general distribution.

The report, which focuses on the Alaskan satellite experiments, will interest communication planners working in rural Third World settings, since bush Alaska is faced with many of the same problems developing countries confront and since the Alaskan experiments are generally considered successful.

Thirteen recommendations are presented in the report. Each is followed by a discussion of the technical and social factors that prompted the proposal. (These rationales are heavily informed by the earlier and longer reports listed in the bibliography.) →

Copies of the document may be obtained from James M. Orvik, Associate Professor, Center for Northern Educational Research, University of Alaska, Fairbanks, Alaska 99701.

Battery-Powered Projector

An unusual slide and filmstrip projector was recently exhibited at England's Open University. Battery-run, the 2.6-kilogram projector can be fitted with an attachment that permits it to show microfilm, microfiche, and microscopic slides. Another attachment converts the versatile device into a polarizing projection microscope.

The steel Halight projector costs £ 50. The micro-attachment costs £ 24 and the polarizer, £ 6. For further information, contact W.M. Herten at THD House, Peacehaven, Sussex BN9 8JJ, ENGLAND.

A Communicator's Checklist

1 Richard C. Burke wrote *The Use of Radio in Adult Literacy Education* with the needs of the middle-level literacy worker in mind. His perspective and his advice tend to be practical, oriented toward problem-solving, and informed by his considerable knowledge of literacy projects that use radio. Still, Burke makes no fast distinctions between the concerns of the upper level bureaucrat and those of the grassroots organizer, both of whom stand to profit by a reading of this monograph.

"Why Radio?" (Chapter One) is a terse defense of the use of radio as the mainstay of literacy projects. Assessed in terms of its cost, the size of its audience, listener participation, and "immediacy" (a term whose literal and connotative meanings Burke takes pains to spell out), radio is presented as a bargain. This conclusion is, however, foregone, at least with respect to cost and audience size, since radio is compared primarily to television.

An analysis of the composition and needs of the listening audience follows the assessment of radio. To the literacy worker, says Burke, fall the all-important tasks of identifying and clarifying the audience's basic needs and of making sure that the curriculum addresses those requirements. Along with material, biological, and social needs, other factors — levels of vocabulary and of concept-understanding, the relation of local to national languages, attitudes toward learning in general and toward radiophonic education in particular — need to be considered. But, as Burke stresses, all such impression-based analysis comes to little unless the field worker shares it on a regular basis with the program producers. Then, he claims, it is nothing less than vital.

Three chapters of the handbook are devoted to planning, developing, producing, and distributing radio programs and support materials. Typical of the kinds of questions taken up are how to distribute staff responsibilities; how to balance the use of radio and the use of print; how to decide if existing radio programming can be adopted to local needs; how to mix talks, dialogues, interviews, discussion, and dramatizations in radio programs; and how to set up production facilities keyed to specific budgets. As the author points out, these chapters and these questions will interest more than those whose daily duties are discussed; indeed, to understand the division of labor in a literacy project is to some extent to understand the project's goals and potential problems.

Burke devotes a large part of the remainder of this work to the technical problems of setting up, maintaining, and evaluating a radio-based literacy program. These chapters tend to be lucid and rich in examples. Because they are generalized enough to be of use to development workers more concerned with sectoral projects than with literacy per se, they naturally leave some questions unanswered or half-answered. But their wide sweep gives the reader a feeling of preparedness and an overview that are no doubt worth more than prescriptions.

On balance, it is Burke's stance halfway between the philosophical and the pragmatic and closer to people than to policy that gives his monograph its flavor and its value. An occasional lapse of judgment or error of fact scarcely mar either.

The Use of Radio in Adult Literacy Education can be mail-ordered from the International Institute for Adult Literacy Methods, P.O. Box 1555, Tehran, Iran. It costs U.S. $2.00. ■ **K.C.**

2 The three parts of Lyra Srinivasan's *Perspectives on Nonformal Adult Learning* — analysis, comparison, and evaluation — combine neatly.

Srinivasan's initial overview of the theoretical forces that underpin nonformal education is weighty and yet free of the voice of authority. Without resort to the use of jargon, she manages to present the ideas of Illich, Freire, Rogers, Knowles, Bruner, Skinner and other theoreticians so that they are accessible to the layperson and acceptable to the expert. In the process, something interesting happens: the union of ideas as seemingly incompatible as those of Skinner and those of Illich begins to appear feasible under certain circumstances. To Srinivasan, this marriage of opposites is fruitful, if uneasy — more like the mix of vinegar and oil than that of fire and ice.

The comparative review of the basic approaches to adult learning, which comprises the monograph's long mid-section, rests on an assumption that few nonformal educators contest: that the psychological environment in which learning takes place is as important as the subject matter. The discussion of problem-centered approaches, projective approaches, and so-called "self-actualizing" approaches thus focuses primarily upon teacher/learner relationships and upon the use of learning materials, though other factors are also considered.

The comparisons the author draws are between purebreds and hybrids, between model projects that closely follow one of the three basic approaches and those that combine approaches. Discussed at length are the Thai "Khit-pen" concept, the Turkish Ministry of Education's use of the projective approach, the Apperception-Interaction Method used in the United States, and the self-actualizing approach employed in Philippines Rural Reconstruction Movement. Nonformal education efforts in Ethiopia, Ghana, and Bangladesh are described in less detail.

True to her belief that adults can determine for themselves what is relevant, Srinivasan withholds judgment until she has presented all the material to her readers. Then she reveals her own pedagogical preferences, which reflect her experience as a participant and an observer in nonformal education experiments.

In the last section, the author strikes a happy balance between the personal and the impersonal. With a qualified claim to speak for all in her field, she lists ten assumptions about nonformal education that guide or should guide the work of nonformal education planners and workers.

This paper's only weakness may be its main strength. The aplomb with which Srinivasan generalizes about the field of nonformal adult learning could annoy some readers. But her ideas cannot be dismissed lightly, and the case studies, appendices, and references she includes will probably serve to quell those who put little stake in overviews.

Perspectives on Nonformal Adult Learning, the first in a series of monographs on functional education, can be purchased for $5.00 from World Education, 1414 Sixth Avenue, New York, N.Y. 10010. ■ **K.C.**

3 In *The Participatory Process: Producing Photo-Literature,* authors Bonnie Cain and John Comings make short work of the notion that "camera ready" means "picture perfect." Rather, they take the view that technical excellence matters less than intent, that well-wrought does not necessarily mean well-received. Far from a sanction for a slapdash approach, this manual simply reflects the idea that learners will know how to use what they themselves have made.

Cain and Coming's paper is intended primarily for use by group leaders in-

terested in developing *fotonovelas* in conjunction with community development projects. In addition to the step-by-step description of the production of the *fotonovela,* discussions of the role of the facilitator in materials generation and in the participatory process in general are included.

The technical section of the paper covers plot sketching, layout, shooting schedules, and printing practices. Parallel sets of instructions are offered, one for those with 35 mm. cameras and another for those with non-regulatory cameras (Polaroids, Instamatics, etc.). A checklist for use in evaluating the effectiveness of the finished products and cursory descriptions of options in photo-literature other than the *fotonovela* round out the presentation.

The Participatory Process: Producing Photo-Literature can be obtained for U.S. $2.25 from the Center for International Education, Hills House South, University of Massachusetts, Amherst, Mass. 01003. ■ **K.C.**

4 Murray Culshaw's *Training for Village Renewal,* published by the Community Development Service of the Lutheran World Federation, focuses primarily on the technical training of village youth in rural development projects. Culshaw provides country-specific information for Asia and Africa, along with a short section on suggested background reading and a brief definition of nonformal training. The various sections cover established programs, magazines, and research institutions. Addresses and contacts are provided for training programs listed.

This publication could be a useful resource to anyone designing or setting up a program in Africa or Asia. However, little information is given on projects and programs in Latin America. While no discussion is devoted to the general principles of rural development, this handbook may still be a worthwhile investment for those interested in training in a specific country in Asia or Africa.

Copies of this publication may be obtained from the Lutheran World Federation, Community Development Service, Route de Ferney 150, 1211 Geneva 20, Switzerland. The cost is $2.00. ■ **A.G.**

5 From the record of the Fourth Biennial Afrolit Society Seminar, just published as *Language and Media Supports for Nonformal Adult Basic Education,* one gets the impression that the sessions seldom dragged but may at times have tended toward confusion. While visions of linguistic paradigms were dancing in one conferee's head, the problems of running a rural newspaper may have been preoccupying the next. All kinds of mental sparks no doubt flew. Whether the linguist and the newspaper editor altered each other's perspectives during the crossfire was, of course, the question.

Two years after the conference the question has changed. Now it is more to the point to ask if and how such an eclectic collection of essays can be used. The answer to "if" seems to be "yes." The answer to "how" is not so simple, and it is left up to the reader to answer.

The nine essays that make up the first part of this monograph are bound by assumptions rather than by subject matter. One is, as Afrolit's chairman Charles T. Hein puts it in the introductory essay, that in the classroom "no one can be the authority without depriving the others of the freedom to create." The other, unstated, is that teachers need to know far more (about language) than they can profitably share with learners. By itself neither idea seems particularly new nor objectionable. The question of whether together they constitute a contradiction will probably send the thoughtful reader into fruitful independent study.

The two most theoretical essays in the collection, "The Concept of 'Difficulty' in Post-Literacy Materials" by F. Peter Cotterell and "Measuring Message Comprehension with Cloze and Clozentropy" by Dennis T. Lowry, are by no means the most elusive of the lot. In the first, Dr. Cotterell delves into learning theory and reviews some fascinating experiments designed to reveal the workings of memory. With the reader still in tow, he surfaces on a piece of solid advice for developing easy-to-read materials for the newly literate.

Dr. Lowry's review of recent research in communications also serves practical goals. After differentiating between quality and quantity in message formation, he classifies all methods of measuring message comprehension as content-based, content/audience-based, or content/audience/criterion group-based. Using this division as a basis, he then offers a three-step strategy for measuring message comprehension.

"The Linguistic Aspects of Alphabetization" by Hailu Fulass also tends to be theoretical. Dr. Fulass' contention that "alphabetization is a kind of language planning" and his thesis that "we have to organize our material and intellectual resources for a *search* for innovation," while interesting, will tend to remain abstractions for those unfamiliar with Oromo, Wolamo, and Amharic — the languages from which he draws his examples.

Three provocative essays in this series deal with specific media: Dennis Moyo's "Kisoma Kwa Redio: Learning Related to Literacy by Radio in Tanzania," Per H. Baugsto's "The Rural Press: Its Future and Prospects in Literacy Work," and Annie Wainaina's "Visual Perception of New Readers: Implications for Literacy Follow-up Materials." A description and an evaluation of Tanzania's radio-education program, Mr. Moyo's article rests on the idea that radio broadcasting cannot serve as the sole medium of adult-literacy programs. Mr. Baugsto's essay amounts to the defense of the rural newspaper as a literacy tool and contains three main points: 1) the rural newspaper is often a better stimulus and reinforcing agent than radio is; 2) rural newspapers should not be distributed free of charge and as education material only; and 3) concern for finding appropriate technology ought to inform more literacy campaigns. (An excerpt from Ms. Wainaina's article will appear in a future issue of *DCR.*)

Language and Media Supports for Nonformal Adult Basic Education, Afrolit's Paper No. 2, also contains Dr. Hailu Arayaa's case study of Ethiopia as a country beseiged by the problems of a multilingual society, a workshop report called "A Multi-media Model for Media Supports for Program Development and Teaching Literacy for Better Family Living," reprints of speeches delivered at the conference, and a section on various agencies engaged in multi-media approaches to literacy and nonformal education.

Edited by F. Peter Cotterell, this paper can be obtained from the Afrolit Society, P.O. Box 72511, Nairobi, Kenya. ■ **K.C.**

6 Slow-scan television (SSTV) is a technique for transmitting a television picture slowly through a narrow channel, rather than quickly through a wide channel as conventional TV is transmitted. This method necessarily entails the loss of the motion portion of video, because motion depends on the very rapid (30 times per second) replacement of the image on the screen to give the illusion of continuous motion. But slow-scan television has an important advantage: narrow channels (such as radio or telephone lines) are both cheaper and more readily available than broadband channels.

Ingram's book is primarily directed at the amateur radio operator, or "ham," who is interested in adding slow-scan capability to his station so that he can exchange video "stills" with other hams. It describes the narrowband 128-line system used by radio amateurs, a low-resolution system that takes eight seconds to transmit a single video picture. For that audience, the book is excellent. It begins with a general introduction to the theory and principles behind SSTV, and proceeds into a detailed technical discussion of "homebrew" gear. It also includes descriptions of commercial amateur equipment, and of specific techniques and products. Block and wiring diagrams, as well as lists of other operators and organizations around the world, augment the text.

The author recognizes the potential of the slow-scan technique for possible development applications, but his book

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will be of limited value to those who are interested in such uses. The quality of the image on the 128-line system, especially when the image is transmitted over high frequency radio, is not high enough to consider for health, disaster relief, or other developmental uses. (For purposes of comparison, the U.S. standard system uses 525 lines; other systems use 625 lines or more).

Since the book is intended for amateur radio users, discussion of non-amateur slow-scan gear is omitted entirely. It also omits any significant discussion of transmission by means other than high frequency radio (by, for example, telephone lines). These omissions are unfortunate because the use of SSTV technique is a potentially promising path for incorporating visual inputs into low cost, audio-based developmental educational activities.

These shortcomings aside, Ingram has produced an excellent and useful book for his intended audience of amateur radio operators, and the general reader may still profit from the sections of the book that discuss the theory and principles of slow-scan television. *The Complete Handbook of Slow-Scan TV* can be obtained by writing TAB Books, Blue Ridge Summit, PA 17214. The cost is $9.95 and the publication number is 859. ■ **Dennis Foote, Academy for Educational Development**

In *Communication and Change: The Last Ten Years — and the Next,* the changes of the last ten years are explored more fully than communications in the next. Attention to appraisal (as defined by contributor Harold D. Lasswell) outweighs that accorded to planning. To take such a view of the book is not to shortchange the appraisal, most of which is provocative and honest. But neither is it simply to quibble about the appropriateness of the title. After all, the book seems intended primarily for use by communication *planners*. Editors Wilbur Schramm and Daniel Lerner, whose essays are less vulnerable than some in the collection to this criticism, recognize this imbalance. But they don't seem as troubled by it as readers may be.

Accepted for what it is, conference proceedings cast in a form akin to a textbook, this volume does lay the groundwork for a discussion that each day looks more like a controversy. It contains history and research findings, opinion and theory, speculation and testimony. The work of economists, communicators, journalists, sociologists, and others, the book offers both partisan and clinical perspectives on the role of communication in development.

An overview and assessment of development and communication from the mid-sixties to the mid-seventies set down the boundaries of the discussion. Wilbur Schramm recites the accomplishments and the failures of the Decade of Development as a prelude to examining the rise and pitfalls of mass communications. More specifically, he asks if more was not expected of the media than the media by themselves could possibly achieve. Schramm then asks that the "task of communication" be redefined "as part of the broader system of change and growth."

In "Development and Mass Communication — a Re-Examination," Economist Harry T. Oshima finds fault with development models based on the notion that the benefits of an ever expanding GNP will eventually trickle down to the poor, criticizes "big push" and other capital-intensive development strategies, and explains both how and why labor-intensive strategies stand a better chance of working — all this in support of his belief that "the role of mass communication is greatly enhanced in a labor-intensive strategy because more people with less education in remote regions must be reached than in a capital-intensive strategy." In a similar vein, S.N. Eisenstadt identifies the flaws in the classical development paradigms and argues convincingly that the modernization process, far from universal and far from a natural development dictated by human nature, is bound to a certain historical period.

Case studies of four development models make up the second part of the book: the approaches taken by Bangladesh and by Korea are discussed in terms of specific projects (Comilla and the "Mothers" Clubs," respectively) while those of India and China are discussed more broadly. Although each of these profiles is fascinating in itself, the emphasis, tone, and level of generality vary so widely from one essay to the next that instructive comparisons are hard to draw. Still, the portraits do provide a basis for evaluating the transferability of an approach, as long as the reader has a particular cultural context in mind.

(Such failures to address the same problems or to address a problem in the same terms are bound to occur at a conference organized to reassess any issue. Indeed, only differences of perspective lead to the new syntheses such conferences exist to forge. Recognizing this fact, the editors include in this book brief responses by some of the conferees to most of the papers included in the volume. Unfortunately, however, few of these responses supply the vital links between the professional experiences of the two parties involved. Some responses amount to little more than restatements of major points while others raise peripheral issues that are as apt to distract or confuse as to intrigue readers.)

In "The Challenge of Rural Development," the third section of the book, Syed A. Rahim compares the extension and community development approach to rural communication with the (1) ideological and mass mobilization approach and with the (2) mass media and education approach. Basing his comparison on an analysis of kinds of communication channels, messages, and flows, and on the identification of the communication initiators and beneficiaries, Rahim contends that the extension and community development approach works better than the mass media approach in a rural setting. Bryant E. Kearl, on the other hand, describes a gradual shift in communication policies (from those that focus on the vertical transmission of messages to those that promote the freer exchange of information among all groups) only to conclude that no existing communication model meets the requirements of a developing agricultural country.

If a consensus among the contributors to the discussion of research issues in development communication (part four of the book) exists, it is that past research findings need to be systematized before future research priorities can be set. Beyond this, however, Gloria Feliciano calls for the use of qualitative indicators in place of or in addition to numerical yardsticks in communication research even as Everett Rogers claims that a structuralist orientation (toward reliance on network analysis) has put communication research back on its feet. While the two views are not contradictory, the difference in emphasis mirrors problems that tend to divide the field.

An historian of this division, Frederick T. C. Yu, compares the communication researcher to Alice lost in Wonderland. In the closing essay of this section, Yu points to a lack of direction that both reflects and promotes the periodic re-invention of the wheel and the pursuit of academic eccentricities. Rather than make what he calls a "shopping list of ideas or suggestions for future research," he identifies "critical problems, opportunities, and challenges with priority implications." (But the force and depth of Yu's analysis notwithstanding, readers may have put to good use the "shopping list" that never materializes.)

The three papers that comprise "Cultural Contexts" are loosely bound. Dr. Inayatullah's essay, which may have fit better alongside Godwin Chu's discussion of China in section two, discusses the inadequacies of the Western development model and the failure of an Asian model to evolve. His call for a new global model is then taken up by Hidetoshi Kato, who discusses the communication implications of globalism. Kato argues that "if more developed countries can put more emphasis on the export of software techniques of program production rather than on canned programs, then more independent 'local' programs, which serve national development, can be produced."

Charles E. Osgood's essay, the last, decidedly does not pick up where Kato and Inayatullah left off. A lively presentation of a linguistic model developed to probe what Osgood calls "subjective culture," the essay is at once a technical description of "factor-analytic models" for

computer processing "semantic differential data" and an invitation for anthropologists to do more than "compare skull shapes and count potsherds."

The essays of the last section ("Retrospect and Prospect") reflect the strengths and weaknesses of the whole. Like the book itself, Daniel Lerner's essay provides a perceptive assessment of development from mid-century to the present. Also like the book, it sketches the future of communication in development in strokes that are spare and deft but that sometimes leave too much to suggestion. Harold D. Lasswell's brilliant outline of the structural and functional components of development does look forward into the future as well as backwards into the past, but it treats communications only in passing.

The papers by Simon Ramo and George Chaplin come closest to catching the past and future in the same frame. As for the rest, readers have no choice but to accept the lapses with the insights. As Lerner and Schramm say in their postscript, development has "proved more difficult and the necessary strategies of communication more complex" than had once been thought.

Communication and Change: The Last Ten Years — and the Next, an East-West Center book, is available from the University Press of Hawaii, Honolulu, Hawaii 96822. ■ **K.C.**

8 Half the task of introducing a new idea is to connect the strange with the familiar. These connections — analogies — not only give learners access to new experience but also give their acquired experience a new use and value. The trick, of course, is to make the right connections.

Juan Flavier seems to have made the right connections. As a family planner at the International Institute of Rural Reconstruction in the Philippines, Dr. Flavier decided that the best way to share potentially foreign-sounding ideas with the rural population is to discuss them in the language of the farm.

Flavier had found that the terminology he and others had been using in the Philippines to explain family planning was doing as much to block as to promote understanding. Terms such as "fertilization" and "ovary," difficult enough to explain to English-speakers, had no Filipino cognates. To add to the confusion, these words were often incorrectly hispanized. Naturally, adult-learners tended to become defensive when communication broke down, and the cause of family planning suffered as a consequence.

The book *The Agricultural Approach to Family Planning* grew out of Flavier's and the IIRR's attempt to compare family-planning concepts and practices to agricultural concepts and practices and thus to make family planning easier to understand and to relate to rural life. It is a heavily illustrated and step-by-step account of how the agricultural analogy approach developed and of how it was implemented in the province of Cavite. At the same time, it is more than a program write-up and could well serve as a master plan for similar efforts undertaken elsewhere.

More than half the book is devoted to the discussion of the development of comic books and flipcharts, the two media to which rural Filipino farmers seem most receptive. Just as the project itself appears to stress the "why" of family planning as much as the "how," this discussion gives roughly equal play to technical factors and pedagogical concerns. The remainder of the book briefly covers project design and evaluation.

In the record of the Cavite project, the reader will find little with which to take issue: the presentation is methodical (if sometimes digressive and repetitious) and no effort is made to conceal the program's failures. Of the materials developed at IIRR and reproduced in extensive appendices, curriculum specialists with experience in rural settings will be the best judges. Virtually no one can dispute the book's thesis — that there is a right and a wrong way to say anything.

The Agricultural Approach to Family Planning is published by the Communication Foundation for Asia and can be obtained from IIRR, Silang, Cavite, Philippines. ■ **K.C.**

9 A training manual on audiovisual communication is now available from World Neighbors. Originally developed by Indiana University for use by Peace Corps Volunteers, this handbook has been designed and revised to help educators plan, produce, and use instructional materials in both the classroom and the community. The book's focus is on items that can be produced in the field at low cost: stencils, puppets, pamphlets, flannel boards, etc. Discussions of planning, use, presentation and production, along with numerous examples, make the *Audiovisual Communication Handbook* a useful basic resource.

Copies may be ordered from Overseas Development Materials, World Neighbors International Headquarters, 5116 North Portland Avenue, Oklahoma City, Oklahoma 73112. ■ **A.G.**

Development Communication Report, published quarterly by the Clearinghouse on Development Communication, is distributed free to over 5500 development professionals.

A center for materials and information on important applications of communication technology to development problems, the Clearinghouse is operated by the Academy for Educational Development, a nonprofit planning organization, and supported by the Technical Assistance Bureau of the U.S. Agency for International Development as part of its program in educational technology and development communication.

Readers are invited to submit typed manuscripts of no more than 1000 words and to send in photographs.

Dilemmas (Continued)

peared that no broadcast time would be provided during the critical hours and that not enough time would be available to make a serious impact. Further, the operations manager admitted that the signal barely covered the capital and its immediate environs, much less the rural areas where the need was most acute and where it was hoped that the radio programs would have the greatest effect. It was, therefore, obvious that several repeater stations would have to be installed if the country were to be covered. But this expense had not been foreseen, and at that time the capital requirements could not be met.

If I had known at the outset that no broadcast time was available and that the broadcast signal was so weak, there would have been little reason to carry out what planning was attempted. As it was, I submitted my completed report and left Country X.

I still don't know if I was deliberately kept away from the radio station or not. But several years later I did find out that nothing had been done with the plan I had proposed. I was not surprised since two major problems doomed this project from its beginnings:

1. The personnel of the Ministry of Education didn't know what they wanted or needed. While the concept of using radio broadcasting to meet some of Country X's educational needs was probably valid, no needs assessment, not even a bit of homework or a one-or-two-day visit by a consultant, provided sufficient foundation on which to build such a proposal. When I arrived, broadcasting and education officials were certainly not ready to bring in a consultant. Even if all of the groundwork had been laid, no consultant could have worked in a mere six weeks the miracle they were expecting.

2. There was obviously no real agreement or understanding between the Ministry of Education and the Broadcasting Corporation. The head of broadcasting may have been patronizing the Minister of Education or simply may not have known what was going on. If the Ministry of Education had had a better idea initially of how much and at what hours broadcast time would be required, cooperation might have been possible. At the very least, the broadcasting people should have admitted as soon as I arrived that a midday broadcast schedule struck them as out of the question.

Again, a brief visit or even a preliminary consultation by mail would have helped all involved with the project to establish certain boundaries, to clarify thinking, and to focus on questions that would have to be answered before more detailed planning could be considered. Without these first small steps, no "great leap forward" was possible. ■

Dilemmas in Country X: Candid discussions about failures

The following account of a failed development effort was submitted by a consultant who wishes to remain anonymous. In it, three tales unfold: (1) that of an international agency whose right hand does not know what its left hand is doing, (2) that of officials within a developing country who are only too willing to leave everything up to outsiders, and (3) that of bureaucratic conflicts of interest within the host country.

(The editor invites readers to submit reports for this column. Authors' names — as well as those of the people, agencies, and countries involved in the projects — will be withheld upon request.)

Seven years ago, the recruiting office of an international aid agency asked me to act as a consultant in educational radio broadcasting in a developing country. I accepted the offer, and after much waiting and several administrative misfires it was established that I was to stop at the agency's international headquarters to be briefed before proceeding to Country X.

I arrived at the agency's headquarters only to find that the person who was supposed to brief me was abroad and that no one else in that office knew anything about me or the project. I was asked to return in several hours. By the time I got back, a woman had been assigned to my case. Her way of handling me was to show me to the "library" and to install me there with copies of two annual reports from Country X. Without anything more in the way of briefing, I boarded my plane the next day.

A young man from the Ministry of Education met me at the airport and took me to a hotel, promising to return the next morning to pick me up. The following day I waited in vain for two hours for my one contact before taking a taxi to the international office of an agency cooperating with my sponsor. There I was greeted most cordially by the resident representative who then admitted, quite candidly, that he had no idea why I was there or what the mission was about. This cooperative official did, however, put me in touch with one of the agency's permanent staff members who was based in the Ministry of Education and who subsequently arranged a meeting with the Minister of Education for the next morning.

At that meeting were the Minister, his private secretary, several officials who dealt with curriculum development and supervision, and the head of the broadcasting corporation. The Minister began by explaining that Country X wished to establish a system of educational radio broadcasts to overcome some of the problems (shortage of space, lack of qualified teachers, poor facilities, etc.) that beleaguered the nation's primary schools.

The head of broadcasting voiced his support for the plan, and as the "visiting expert" I was asked for my views. In what I hoped was a very guarded statement, I then outlined some of the possibilities and problems that might be encountered, and I suggested some ways of beginning the planning . . . all of this after only the briefest introduction to the situation.

It soon became apparent that these officials' idea of planning differed wildly from mine. They were not envisioning a cooperative undertaking in which I assisted or advised. They wanted me to present them with a complete blueprint. While they were most helpful and willing to share whatever information they had (copies of the curricula, and so on), they simply did not wish to discuss details. All that was left up to me. I was the "expert."

It might be interesting to note here that the Education Ministry's staff included a Director of School Broadcasts. His interest lay, however, in the technical side — which in this case consisted of seeing that schools had functioning radios. Since there were no broadcasts for schools, his duties were few. Moreover, he showed no interest in the possibility that such broadcasts might be developed.

With certain misgivings, I agreed to draft an introductory plan for the broadcasting program. I reviewed the primary school curricula, sketched out tentative schemes for organizing series of courses, suggested timetables, listed the support materials that would be needed, noted equipment requirements, and stressed the need for training teachers to take advantage of the broadcasts.

During this time, I repeatedly asked if I could visit the radio station. I wanted to see the physical facilities and to discuss a few of the plan's technical aspects. Each time I was told that the head of broadcasting was not available and that it would not be proper for a person of my "status" to visit the station in his absence. Finally, when my tour was drawing to a close and the chief was still not available, protocol was relaxed: I was allowed to visit the station and to speak to the person who actually ran the operations.

The station, the only one in Country X, broadcast in the morning, afternoon, and evening but was shut down from mid-morning until mid-afternoon, the most useful period for the proposed plan. It would not, I was told, be possible for the station to allocate any broadcast time during these periods as they were reserved for maintenance. In spite of the support that the head of broadcasting had been expressing in our first meeting, it ap-

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Development Communication Report

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RECONSIDERING PRINT

In the first Development Decade, the 1960s, the role of print media seemed relatively clear. The expansion of formal education was seen as the primary means of promoting learning for development, and major textbook programs were undertaken. Journalism was considered indispensable in "modernizing" attitudes, and newspaper publishing was vigorously promoted. Literacy was seen as a necessary first step in education and was promoted through such efforts as the UNESCO Experimental World Literacy Program (EWLP).

However, ten years after EWLP began, there were more illiterates in the world rather than fewer. Newspapers had, generally, reached only urban and relatively well-off people. And formal education had seemingly failed to cope with the learning needs of the poor, rural, and adult populations of the developing world.

As nonformal education has evolved to complement schooling, radio has been increasingly advocated as the medium for reaching the previously unreachable and for teaching around the literacy barrier. Outside the education sphere (formal and nonformal), radio reception and usage has increased throughout the developing world, while newspapers and other print media have generally languished.

Still, print media are probably being used in development projects more than ever. Colombia's impressive "radio school" network (ACPO) produces a weekly rural newspaper with a circulation of 70,000 and has sold millions of books in its "peasant library" series. In the Tanzanian "radio" health campaign, hundreds of thousands of study booklets were produced and distributed. England's International Extension College stresses three-way teaching, which involves study groups with radio and print.

Perhaps print media are too often taken for granted. They certainly are difficult to finance, distribute, and address to lower than middle-class populations that are less than highly literate. Yet it would be unwise to overlook the unique communication capabilities of print, or to fail to consider where print may help educate poor, rural, and adult populations in the developing world.

Indeed, print media have communication characteristics that no projection or broadcast medium can match. No other medium could reach the 6,000 worldwide readers of this publication at affordable costs. If we could finance a worldwide broadcast, a radio or TV announcer would need over ninety minutes to read this issue of Development Communication Report.

Even if this issue were read aloud, no listener could absorb all this information upon one reading. Weary listeners could not pause. Even those who maintained concentration throughout our broadcast would prove unable to recall most of the information. They could not review the information unless they had an audio or video tape recorder. If they did, they would have difficulty locating a given piece of information in a hurry.

Print's storage capacity, its facility for review, and its capacity for use without equipment make it suitable for meeting many of the information needs of educated middle-class people. In this issue, we explore its role in serving the poor majority populations in the developing world. Below we report on a rural newspaper, a magazine for change agents, a series of cloth posters for classroom use, and a community-run "blackboard newspaper."

We have touched here only lightly upon the better known opportunities and problems of book publishing in the developing world. We have also left for future issues the discussion of the evolving high technology of communications, with its awesome potential for conveying print and non-print messages to mass audiences.

We hope that the following articles will contribute to the reconsideration of print and its power. ■ *J.G.*

The *Densu Times* — Self-Made Literacy

The *Densu Times* research project undertaken in Ghana emerged from concern about illiteracy in general. A school and community newspaper distributed weekly to 2,500 middle school (junior high school level) students in rural areas could, researchers surmised, provide an answer to schoolbook shortages and facilitate a breakthrough in literacy development in Ghana and other developing countries.

The project also grew out of efforts to come to grips with three discomforting facts (and their simple corollaries) related to illiteracy in Ghana:

Fact I: Approximately 72 percent of Ghana's adults cannot read or write.

Corollary: Statistically and historically, this means that four to five million Ghanaians are handicapped. They are locked into an economy and lifestyle that is centuries old. They support themselves and their families by subsistence agriculture, fishing, herding and handwork, or they live in cities, where they are likely to be unemployed or underemployed. As a class, illiterate Ghanaians are poorly nourished, in relatively poor health, and inadequately "connected up" with their regional and national governments. They are not living up to their human potential, and they are not able to share fully the nation's goals and aspirations.

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African Development News Magazine Finds Eager Public

In Senegal, West Africa, a publication originally created for grassroots change agents — extension workers, primary-school teachers and paramedics, is now outstripping all other magazines in newsstand sales. *Famille et Developpment* offers its readers basic information on family health and general development issues. So sought after is the magazine that subscriptions are often dropped because copies are frequently stolen from the mails.

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A publication of the Clearinghouse on Development Communication
Supported by the Development Support Bureau of the U.S. Agency for International Development

(Continued from page 1)

Pierre Pradervand, founder and managing director of *F&D,* describes sub-Saharan Africa as one of the areas most blighted — from information scarcity — in the developing world. Assuming that the dissemination of useful information is key to the development process, Pradervand suspected that a publication carrying information vital to people's day-to-day lives would find an accepting public.

Thus, in the autumn of 1973, with the financial backing of the International Development Research Center (IDRC), a Canadian international aid agency, Pradervand, a Swiss sociologist with extensive experience in Africa, undertook a careful investigation of appropriate topics and formats for a projected periodical. The response of surveys, interviews with government officials, and participants in a feasibility conference held in Dakar suggested the need for an African periodical devoted to consciousness-raising of grassroots trainers on topics of family health and development. In November of 1974, a trial issue of 3,000 copies was circulated in West Africa. Today, circulation has reached 35,000 (with 12,000 of those sold in Senegal, where *F&D* is published).

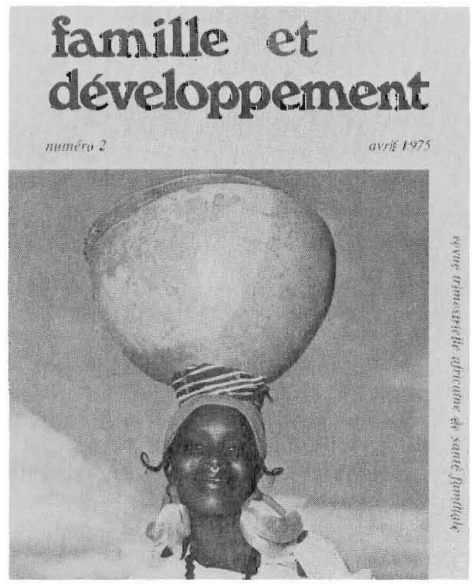
Topics treated in the magazine include general information on underdevelopment and basic economic concepts such as inflation and productivity, education and culture. The impact of foreign periodicals on Africa receives coverage, as does educational experience in various countries. Articles on agriculture and food production, maternal and child care, health, and family planning fill up a great deal of the magazine. Simple African recipes made from nutritious and available foods are featured, and each issue contains an article with accompanying teaching aids on one of a wide variety of scientific topics — from ocean pollution to solar energy.

An expansive editorial policy allows for candid treatment of hitherto taboo topics — the status and work of women in a male-dominated Islamic culture, and issues of sex education. Eighty percent of the letters-to-the-editor refer to sexual matters and most of them are from men. Pradervand cited the enormous chasm of information on sex and family-health habits, but said that while sex education is a concern of the magazine, it is not its major focus. *F&D's* overriding goal is to stimulate among its readers an ability to deal with their environments, and a spirit of self-reliance. In attempting to get information down to the grassroots level, *F&D* encourages people to help themselves with little or minimal reliance on outside help. Health and nutrition articles often suggest the do-it-yourself approach, educating readers in paramedical skills.

African cultural values are promoted in *F&D.* Various articles discourage the use of skin whiteners, condemn Western pornographic and violent films, and decry the influx of tawdry French magazines. More positive articles investigate the potential of traditional medicines, explore the use of existing youth institutions to promote rural development, and suggest adaptations of modern technology to locally available materials and needs.

Each issue's cover uses color to advantage, often illustrating African women in regional dress and jewelry. The professional photographs contribute to the magazine's successful competition with other newsstand items. Quality photos are not bought at exorbitant prices. Instead, they are purchased in bulk at a discount. In addition, while the cover is printed on glossy stock, the use of interior pages of high-grade newsprint keeps costs down. On such paper, the photos reproduce well, printing is usually black and white, and illustrations appear well defined and attractive. Inserts of tinted pages set off special treatment sections.

F&D's editorial board, with the exception of Pradervand, is entirely made up of Africans. Marie-Angelique Savane, a Senegalese social scientist, has edited the periodical from the beginning and exercises final authority over all articles. She and Pradervand develop most of the copy, contacting people when they travel.



F&D now reaches twelve francophone African countries — Senegal, Togo, Upper Volta, Benin, Mali, Ivory Coast, Zaire, Cameroon, Niger, Chad, Congo, and Mauritania. The actual size of the readership is difficult to assess, as copies of the magazine are often sold two or three times. Other copies are simply passed from hand to hand. While its present circulation is mainly in urban centers, the magazine has penetrated some surprisingly remote rural areas. But, until now there has been no aggressive dissemination of the magazine. If requested support is received, getting *F&D* out to the rural areas will assume greater importance.

Innovative means of distribution will have to be found in a region known for its poor roads and the inherent difficulties posed to transportation. But, Pradervand observes, in Chad, a country twice the size of France with a terrible road system, beer is successfully distributed to even the most remote villages. So, he is presently investigating beer distributors as a means of rural distribution. Pradervand would like to see the magazine reach northern Africa as well. At present, there is even a small market in Europe and those who read *F&D* feel that it provides the European public with a unique view of realistic African experiences seen through African eyes.

Utilization of the magazine is broad. In Togo, for instance, the Ministry of Education requests 4,000 copies and distributes them in cooperative bookstores run by the Ministry. Primary-school teachers take subscriptions, and the Ministry has publicly stated that it considers *F&D* a tool for educational reform.

Why does a magazine published and developed in Senegal appeal to the people of Togo? Pradervand and Savane's solution is not to name countries in an article. This approach is successful, Pradervand said, because the problems treated in the magazine are universal — sex education, unemployment, lack of medicine, and shortages of health centers. Also, editors screen out highly ideological or political statements thought inappropriate in view of *F&D's* foreign funding.

While a formal evaluation of the impact of the magazine has not been made, certain observable measures suggest its growing effectiveness: a phenomenal success on the newsstand with a public that Pradervand describes as generally non-reading, and voluminous and thoughtful reader response via the mail. Articles are frequently reprinted in the newspapers or broadcast on the radio. Finally, the magazine is increasingly used as a teaching tool and, in fact, its editors are now exploring new formats that would enable *F&D* to be used more widely in the classroom.

IDRC has funded the magazine for the past three years. At present *F&D* accepts no advertising, but financial pressures in the future could change that. Subsidized and less expensive than other newsstand items, *F&D* (at U.S. 80¢ per issue) is still beyond the means of most people. Receipts from sales cover only 5 percent of costs, but Pradervand sees this increasing to 15 percent in 1978. IDRC and a pending Ford Foundation grant will help meet most of the basic costs for 1978.

This month IDRC is expected to pass over legal responsibility of the magazine to the African Association for Development Education, and *F&D* will become an autonomous legal entity. Initially, the primary work of the Association will be to publish *F&D,* but textbooks and other educational materials are foreseen as future projects.

F&D's yearly subscription rate is U.S. $10.00. Information on rates for other countries can be gained by writing *Famille et Developpement,* B.P. 11007 D.C. Annex, Dakar, Senegal. ■ **J.M.**

(Continued from page 1)

Fact II: The schools — the institutions assigned by society to solve the problem of illiteracy — are losing the battle. Although Ghana is ahead of most African countries in providing education opportunities, an estimated 25 percent of Ghanaian children do not enter school, and fewer than half of those who do complete the elementary grades only.

Corollary: The government effort mounted against illiteracy must be extended by more and better schools or by new devices and institutions to supplement the school effort.

Fact III: Most of Ghana's communication resources (newspapers, radio, television, telephones, mail service) that encourage literacy are concentrated in the country's metropolitan areas, yet the key to development in Ghana lies in altering conditions of rural life, thereby raising the productivity of the 75 percent of the people engaged in agriculture.

Corollary: If communications resources are allocated more equitably, rural people will get the same motivations for literacy and opportunities for information as do those who live in urban areas.

THE *DENSU TIMES*

Ghana was a British colony until 1957 and inherited a British school system. English is the official language of the government in Ghana and is used in the schools from grade four on. Students are expected to achieve literacy in English at the middle school (junior high) level.

Accordingly, the research proposal for the *Densu Times* project reflected the assumption that the introduction of a school/community newspaper that carries local and personal news and that is written simply and illustrated with local pictures will motivate illiterates to read and semi-literates to improve their reading skills.

It was further anticipated that improvement in literacy levels could be measured quantitatively by comparing "before" and "after" scores on a reading-comprehension test of persons in experimental and control groups. The experimental-group persons would receive the newspaper weekly; those in control groups and in a similar school environment would not.

The research team was assured by school officials in Ghana's Eastern Region that a suitable group for testing would comprise middle school Forms II and III (8th and 9th-year students).

PRE-PROJECT PLANNING

With the counsel and cooperation of the school authorities in the Eastern Region, the research team identified 40 schools as typical and accessible. Twenty of the schools were selected as control groups; 20 were deemed "newspaper" or experimental schools. All the school villages are rural, about half have electricity, and only a few have piped water. All lie in the rich cocoa-producing area approximately 55 miles north of Accra, the capital of Ghana. The control schools and experimental schools are separated geographically.

Controlling research variables in fieldwork in rural Africa is not easy. Some schools are in isolated areas; students are uneasy with strangers, particularly if the strangers are foreigners; the competence of teachers is uneven; the availability of classroom teaching aids varies from village to village and ranges from zero to adequate; and demographic data are difficult to compile among illiterates and semi-literates.

But such threats to data distortion were taken into account in the research planning, and the research team tried to anticipate variables that might impair the value of the data. School administrators of the Eastern Region cooperated in the selection of experimental control-group schools and took precautions to insure that teachers in the control and experimental schools were roughly equal in teaching skills. Student access to textbooks and other teaching aids was similar, if not identical, in the matched schools; and attention was paid to the number of bush schools and village schools in the control and experimental groupings.

Students in the control group may have been aware of the *Densu Times*, but they did not gain access to the papers, and efforts were made to avoid relating the testing operations to the *Densu Times* in order to minimize the so-called "Hawthorne Effect" (i.e., stimulation of student effort by reason of their being participants in the research project).

TESTING

Students in Forms II and III of all 40 schools were "pre-tested" during the week of October 7, 1974, by members of the research team and by teachers recruited from the regional school office. The simple reading-comprehension test they took was designed with the help of staff members of the Division of Research and Curriculum of Ghana's Ministry of Education. It was fashioned after tests prepared by the West Africa Examinations Council, and its difficulty and suitability were tested on middle-school students outside the Eastern Region. The test-takers were assigned code numbers identifying them as to age, sex, grade, tribe, religion, vocation of father, education of parents, and size of village so that subgroups could be matched when the test results were processed.

One week after the testing was complete, the first issue of the *Densu Times* was published and delivered to all the newspaper schools. Teachers were invited to use the papers in the classroom as supplemental reading material, but they were not instructed to do so. Students were free to take the paper home.

Post-tests were given to the students in June of 1975 and again in June of 1976. Procedures were identical for the three tests. The students had the opportunity in the pretest and the first post-test to select 47 correct answers. In the second post-test, the students could select a maximum of 37 correct answers. At the end of the first school year, 1,951 of the participating students were still in school and turned in test papers. At the end of the second year, 1,659 students were still in school and completed the test.

In addition to paired groupings for all the students by control and experimental groups, pairings were made by sex and by Forms II and III. Groups have also been matched for comparison by mean scores in "top third," "middle third," and "low third." Over the two years of the study, all the experimental students showed a mean test-score gain of 17.21 percent; the control-group students had a mean gain of 11.77 percent.

Experimental-group students who started the project in Form II posted a mean test-score gain of 18.9 percent, while the paired control-group students gained 13.9 percent. Experimental-group students who began in Form III had a mean score gain of 15.5 percent; the corresponding control-group students had a mean score gain of 9.61 percent.

Some significance must be attached to the performance of the low-scoring students in the study. During the first year the newspaper appeared to have a negative effect on students whose mean scores comprised the low one-third. First-year data suggest that these low-score students were illiterate and guessed at answers to the examination questions. In most cases, these students posted higher scores on the pretest than on the post-test, even though they had completed a full academic year of schooling between the two test dates. During Year II the pattern was reversed. The "slow" students had percentage gains that often matched, and in some cases outstripped, the gains of the "bright" students — those in the top third and middle third groupings.

As anticipated, information other than statistical data, as well as ideas, flowed from the research. From the beginning, researchers had hypothesized that the newspaper would (1) supplement the continuing efforts of middle-school teachers to make reading a pleasurable, practical, and useful skill; (2) ensure that students gain the "reading habit" even though they may not enter secondary school; and (3) introduce into village homes the experience of receiving an easy-to-read newspaper with local personal news about neighborhood problems and activities, and thus motivate non-reading adults to become literate. And, indeed, the enthusiasm with which school administrators, government officials, teachers, students, and villagers responded to the newspaper may ultimately prove of more practical importance in Ghana than statistical evidence of literacy improvement. →

COMMUNITY RESPONSE

Even before the *Densu Times* was a year old, the Eastern Region Education Officer had the following to say in a letter to his superior, the Principal Secretary of the Ministry of Education:

"As a research project, the *Densu Times* has great potentialities for providing a vital tool for the realization of a major breakthrough in our bid to revolutionize our educational system at that vital level, namely, the Middle School level . . . I have no doubt in my mind as to the total success of the project and the realization of its objectives . . ."

Teachers in schools receiving the *Densu Times* also held the paper in high regard as a classroom resource. In response to a questionnaire, 83 percent of the teachers rated the paper "more useful" than the available textbooks in teaching reading skills. Although teachers received no instructions from the research team or from their school administrators about the use of the paper, 75 percent of the teachers used the *Densu Times* in the classroom "every week without fail." The teachers, without exception, recommended that "school/community newspapers like the *Densu Times* should be introduced throughout Ghana as part of the academic program for Middle Schools."

One teacher used the *Densu Times* as the vehicle for organizing an extra-curricular *Densu Times* Readers Club. The club enrolled 124 members and prepared a constitution that set for its goals the following: "(a) to maintain and sustain the members' interest in reading the *Densu Times,* (b) to promote bonds of friendship among members through debate, games, get togethers, excursions, etc., and (c) to assist the staff of the *Densu Times* in making the paper worthy of its purpose."

Additional evidence of the impact of the *Densu Times* came in its acceptance by the students and by their overt response to it. The students were invited in the second issue of the paper to submit letters, articles, news, or stories for publication. During the remaining 24 weeks of the first year of publication, the editors received 1,335 written contributions for publication. Throughout the two years, contributions from students (and from townspeople) came to the editors at the rate of approximately 35 per week.

The effect of the *Densu Times* in the villages outside the school environment was difficult to measure with accuracy, but a survey showed that the paper did affect non-students. A sample of 205 adults was interviewed during May of the first project year in villages where the newspaper schools were located. Over half, 109, were familiar with the paper and had either read it or had had it read to them. Of 72 illiterate adults interviewed, 10 indicated interest in the *Densu Times* and had had stories read to them during the year.

In homes of students who received the *Densu Times* at school, the paper was recognized and used more heavily. In an interview survey of 30 such homes, 58 persons reported either having read the paper or having it read to them.

CONCLUSIONS AND AFTERTHOUGHTS

The *Densu Times* project suggests, at the very least, that the rural newspaper deserves further research, and possibly additional trials. Indeed, the Government of Ghana is already acting on results of the *Densu Times* research.

During 1975-1976 a school/community newspaper, the *Akora New Era,* was published for 20 middle schools in the Central Region near Swedru; and a paper, the *Shinkofi Times,* began publication in October 1976 near Tamale in the Northern Region.

The data, the responses of school and government administrators, and the enthusiasm for the *Densu Times* of teachers and students all serve to indicate that the school/community newspaper is an effective teaching aid and a suitable device for dealing with illiteracy.

■ **M. Neff Smart, Communication Department, University of Utah.** **Research for this article was supported by the University of Ghana, the Carnegie Corporation, and the Ghana Ministry of Information & Ministry of Education.**

The *Densu Times* is produced weekly during the school year by a team of three reporters, a typist, and two graduate students at the University of Ghana's School of Journalism. It is edited and pasted up camera-ready by the students and is printed by a government press. It is delivered each Thursday to 20 schools on a route approximately parallel to the Densu River, which winds its way 100 miles through Ghana's Eastern Region.

News for the *Densu Times* is gathered by three semi-professional reporters employed by the project. They live in villages near the newspaper schools and prepare news stories and features related to the students and to village activities.

Included in the weekly issues are a map, a simple crossword puzzle, a quiz, and articles and stories contributed by student and village readers.

Profiles In Translation

The first 16 *Project Profiles* can now be obtained in Spanish and French. Brief summaries of development projects that use the communication media, the *Profiles* are published by the Clearinghouse at the rate of eight per quarter and are underwritten by the Office of Education and Human Resources of the Development Support Bureau of US/AID.

Requests for *Project Profiles* should be addressed to Alexander Greeley at the Clearinghouse.

A Word About Print Technologies

Printing holds a place of importance in the development of communication for two reasons. First, print provides something more permanent than a tape recording of either sound or of sound linked with vision. Second, it can be used by the individual without additional equipment.

Printing covers a wide range of dissimilar techniques and processes. When regarded as a technology appropriate to a particular situation, it has to include all techniques of reproducing words and pictures on paper, and thus stencil duplication may occupy as important a place as lithographic printing. Some printing techniques are simple and can be used by a village community in which craft abilities are not highly developed. Other more involved techniques require elaborate equipment and are unsuitable for use in a rural community.

Unfortunately, many laymen regard printing in terms of a single uncomplicated process. When those who hold this inaccurate view give advice to communities with little or no technical experience, the product is often so poorly produced as to be of doubtful value. Sometimes the process is abandoned altogether under such circumstances.

To ensure that the printed matter for a developing country is effective both in content and quality, it is essential (a) that the degree of local literacy is understood, (b) that the material is written in simple language and preferably compiled by someone with knowledge of the local situation, (c) that illustrations are of an uncomplicated nature and reproducible by the process of printing selected for the locale, and, (d) if print materials are to be produced locally, that the printing process used be one that is suitable both technically and economically to the locale in which it is to be adopted.

It is also evident that when a large quantity of printed matter is to be produced for distribution over a wide area, Third World publishers who are not accustomed to dealing with printed material in bulk do not always proceed in the most economical manner. Often, these authorities need counsel just as much as the village teacher wishing to produce some simple educational material does.

Thus, in London, the Printing Panel of the Intermediate Technology Group seeks to offer advice to all who need it. The Panel treats each case separately, and has among its advisors people who are experienced in various aspects of printing. Its field of operation is geographically unlimited, though it advocates making the best use of any organization that might work closer to a particular field situation than its own members can.

■ **H.W. Larken, Chairman, Printing Panel of the Intermediate Technology Group, 9 King Street, London WCZE 8HN, U.K.**

On File at ERIC

Library services and training, instructional materials for job-related training, and the communication of information in solid state physics in the People's Republic of China are among the topics discussed in recent entries in the ERIC (Educational Resources Information Center) files.

- Marshall, John. *Library Services for Native People: A Brief to the Ontario Task Force on the Education of Native Peoples.* November 1975, 17p. (ED 136 768).

  Information is essential to the native people of Canada if they are to preserve their national heritage and determine their own destiny. They need the information that libraries can provide; however, they also need special information that only they can create, and they need to participate in the production and dissemination of these tools of individual and communal development. This study examines the problem from three perspectives: access to existing library services, development of native-run library services, and effective cooperation between the two. Available from EDRS in microfiche for 83¢, in photocopy for $1.67, both prices plus postage.

- *Notes on Professional Education for Librarianship in the United States.* Chicago: American Library Association, 1976, 8p. (ED 140 839).

  This outline, which briefly describes the American system of education with major emphasis on professional library education, was designed for the foreign student interested in pursuing a graduate degree in library science. Specific topics include the A.L.A. accreditation system for library schools, the semester system, application and admission procedures, and scholarships and fellowships available from library schools. Available from EDRS in microfiche for 83¢, in photocopy for $1.67, both prices plus postage.

- Catoline, James E. *Software for Managing the Process of Manpower Training for Economic and Industrial Development.* Waltham, Mass: GTE Sylvania Training Operations, 1977, 36p. (ED 140 845).

  Job training and human resource development are necessary to provide qualified specialists to take over the operation of factories, businesses, and institutions of higher education in developing nations. GTE Sylvania Training Operations (STO) has developed and made available a number of curricular materials and evaluation instruments for its training programs. Both can be used effectively in technical and language training programs, whether academic, commercial, or industry related. Discussed in this document are an English Proficiency Test, a Language Competency Scale, an Oral Interview Rating System, a Cross-Cultural Orientation Course, a Modern Concepts of Management Course, Applied Sciences Aptitude Test Batteries, an English for Special Purposes Curriculum, Intensive Courses in several languages, and other useful materials. Available from EDRS in microfiche for 83¢, in photocopy for $2.06, both prices plus postage.

- Fitzgerald, Anne, and Charles P. Slichter. *Solid State Physics in the People's Republic of China. A Trip Report of the American Solid State Physics Delegation.* Washington, D.C.: National Academy of Sciences — National Research Council, Committee on Scholarly Communication with the People's Republic of China, 1976, 20p. (ED 136 789).

  This chapter, from a report on Chinese research and education in solid state physics, concerns the communication of information in the scientific community and the transfer of information to students and practical users (manufacturers). While the number of different modes and channels of communication are essentially uninfluenced by international boundaries, their roles and characteristics are quite different for cultural reasons. A brief narrative appraisal is provided on exchange of personnel, seminars, conferences, research journals, reports, travel and publication outside China, and libraries. The transfer of technology from research to production mainly involves personal contacts, a system that works well given the relatively small scientific and technical establishments. Available from EDRS in microfiche for 83¢, in photocopy for $1.67, both prices plus postage.

Documents available from EDRS can be ordered from ERIC Document Reproduction Center, P.O. Box 190, Arlington, VA 22210. Order by ED number and enclose payment for the price plus postage. For information about ERIC, indexes to ERIC documents, and other services, write ERIC Clearinghouse on Information Resources, School of Education, Syracuse University, Syracuse, New York 13210.

■ **Barbara B. Minor, Publications Coordinator, ERIC Clearinghouse on Information Resources**

The Facts on Paper

The following information was excerpted from an article by Dan Morgan, "The Third World's Paper Gap," which appeared in the Washington Post *on December 4, 1977.*

1) About 85 percent of the factories and technology for making packaging, pulp and paper are located in developed nations — and only tiny amounts of their product reach the Third World. In 1975, the LDCs used only 11.8 million tons of the total 133 million tons produced in the world, and imported only 4 million tons.
2) "Failure to provide for the growing demands for paper in the less developed countries seems likely to undercut much of the current effort to expand mass education and increased literacy," says a widely circulated paper by a private analyst.
3) According to (one) consultant, many governments of developing countries do not perceive that small investments in paper tend to become magnified in the economy. Yet these investments bring about extensive improvements in communications and commodity distribution.
4) The FAO estimates that developing countries will increase their consumption of paper from the present 11.8 million tons a year to between 28.7 and 37.5 million tons by 1990.

   "Paper continues to be freely available to developing countries in the international market," the new study said. "No serious shortage of supply is foreseen in the immediate future."

   Yet it is uncertain how the non-wealthy world will reach these volumes.

   The countries can step up imports — but this will leave them at the mercy of world price changes that temporarily drove paper costs beyond the reach of many of them in 1974.
5) Taking note of paper's importance, development officials at the United Nations are emphasizing investments in new kinds of smaller, cheaper plants relying on local paper-making resources such as bamboo, straw, reeds, bagasse, kenal and sisal. These materials don't produce quality paper, but they work, say the officials.

Job Opportunity

A communication specialist and *DCR* reader has informed the Clearinghouse that a one-month grant is available for a graduate student in nonformal education or communications. The directors of the U.S. AID-funded Mali Livestock II project are looking for an assistant to help evaluate the project in May of 1978 in Mali. The grant will cover airfare and include a modest per diem. Fluency in French is required.

Interested parties should send resumes to Benedict Tisa, NFE, 45 Haddon Avenue, Westmont, NJ 08108, U.S.A.

Reusable Print — Cloth Posters

Without paper-production facilities of their own, many developing countries must import all their paper. Recent world paper shortages and skyrocketing paper prices have made it more difficult for these countries simply to maintain previous levels of paper supplies, not to mention keep up with growing demand.

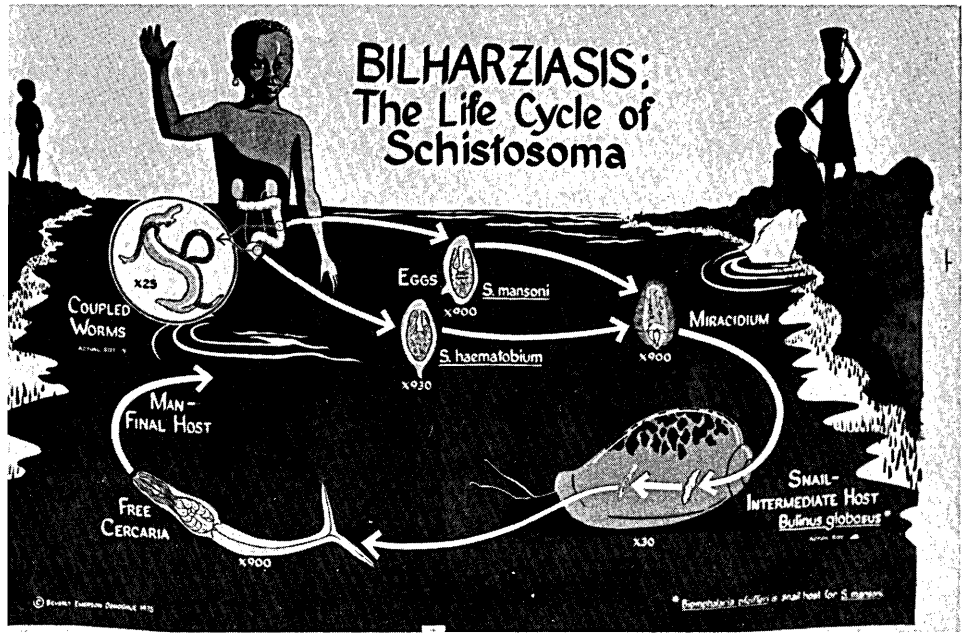
Not surprisingly, posters and visual aids are difficult to come by in paper-short nations. Because they are so expensive, such aids are often beyond the budgets of financially strapped schools. Because they are so fragile, they are too often kept locked up in cabinets instead of hung in plain view. In addition, many imported illustrations and other course materials are irrelevant to the cultural setting and local needs. In short, the problem of supplying visual aids is one of quality as well as quantity.

Screen-printing illustrations on cloth is an example of a visual-aids technology that is appropriate for production and use in many poor countries in Africa and elsewhere. This manufacturing process is already used locally by many textile companies to produce much of the colorful cotton market-cloth worn by young and old alike. In fact, textile firms in several developing countries have already manufactured fabrics illustrating slogans on national campaigns — such as "Healthful Foods" in Tanzania and "Operation Feed Yourself" in Ghana.

Screen-printed cloth offers three main advantages over conventional visual materials: it is culturally relevant, it can be manufactured locally at existing factories, and it is durable. While paper may be viewed as a luxury item and electric/electronic visual media as novelties, the printed cloth medium is a familiar one in both rural and urban communities. The durability of cloth makes it particularly useful for rural areas, both in the classroom and in the village: it is resistant to wear and tear, easily washed when soiled, and readily folded up and carried by roving extension workers.

Since the textile medium seemed to be such a natural one for Africa, a prototype operation was organized in Ghana in 1974 to test the technical feasibility of printing large finely-illustrated posters on cloth, to find out how acceptable the cloth medium would be to educators and health personnel, and to determine the production costs involved. With the assistance of private educational organizations, private industry, and government agencies, Ghanaian art students designed and printed on cloth 4-color illustrations of a variety of subjects. They made a chart of the eye, an illustration of the digestive system, and a physical map of Africa.

While their impact in the classroom has yet to be systematically evaluated, these large (3 feet by 5 feet) illustrations were



(One of many cloth posters created by Beverly Donoghue.)

presented at several conferences in Ghana in 1974 and distributed to educators from various African countries for their appraisal. At the science teachers' annual conference, teachers at all levels (from primary schools through training colleges) unanimously preferred such locally produced textile aids to imported ones. Nursing administrators attending an annual conference were also highly positive and were excited to see for the first time a teaching aid depicting an African rather than a European. At an inter-African conference on environmental science, the delegates also received both the medium and the specific designs quite enthusiastically and remarked that the printed cloth medium could greatly enhance public health efforts in their countries.

Like most printing processes, silk-screen printing is economically feasible if done on a mass-production basis. Based on a minimum order of 4,000 yards, or 2,400 copies of 3′ x 5′ posters, preliminary cost estimates made in Ghana in 1974 indicated that these large 4-color illustrations could be screen-printed on cloth for less than U.S. $3.00 each — as compared with U.S. $13.00 for imported paper ones. Although this estimate does not include storage, marketing, and distribution costs, this production price would be very competitive with imported items, and sales at the estimated price would benefit the local cloth industry. The large numbers of primary schools (over 10,000 in Ghana) and nonformal education programs provide a significant potential market for these textile visual aids, and translating the texts to the vernacular usually simply involves substituting a single stencil of the appropriate words.

Some of the printing materials needed in this process would have to be imported, requiring an outlay of foreign exchange. But if the amount of foreign exchange currently spent on importing paper aids was used for these supplies instead, local industry could produce both more and better visual materials at lower actual cost. It is also possible that greater use could be made of local dyes and screen materials to decrease the cost further and make rural-based cottage industry production more feasible, particularly for smaller scale nonformal education programs.

Given the enthusiastic acceptance of textile visual aids thus far, the medium appears to have great potential. As a durable, comparatively inexpensive, culturally relevant and indigenous product, textile visuals could well serve both formal and nonformal educational efforts in Africa and in other developing regions as well.

■ **Beverly Emerson Donoghue, Ph.D. Candidate, Columbia Teachers College**

Erasable Print — Blackboard Newspapers

The *Moalboal Times* is a daily blackboard newspaper that has appeared without a break for seven years. This alone makes it unique in the Philippines: all other mass media missed at least a day when martial law was declared in September 1972.

The *Moalboal Times* is a string of 25 blackboards (green boards, to be precise) located throughout the 18,000-member community. One big board — ten feet high, 32 feet wide — is next to the market, the priest's house and the main bus stop right in the middle of the *poblacion,* or town center. Twelve more boards, about one yard square, are located on street intersections around the *poblacion* and 12 more small boards are outside schools in the 12 *barrios* (districts) around the town. About 3,000 people live in the *poblacion;* the remainder live in the *barrios,* which are up to 18 kilometers away.

The *Moalboal Times* is the major "mass" medium in the community. The daily paper from Cebu City and the Manila dailies can all reach the town before noon (there are about 20 round-island buses a day), but their circulation is approximately two each — to the priest and the mayor. At an average price of about 75 centavos (10 U.S. cents), they are simply too expensive in a place where the average daily wage is about five pesos (70 U.S. cents). Many people have transistor radios, but it is a fair bet that music, rather than news and information, attracts the prime audience.

As in most small agricultural communities, receiving news and information is one of the main reasons for social activity. And most people in Moalboal still go to the shops or a local meeting place at least once a day. (There is little refrigeration and the money comes in on a day-to-day basis.) Literacy is surprisingly good— about 80 percent in Cebuano, the mother tongue, and about 30 percent in English. Filipino, the national language, is between the two but growing, thanks to national educational policy. Thus, the blackboards are available at the social meeting places — and most people can read them.

Above all, the *Moalboal Times* is a team effort. The news-gathering function is well organized. The township is divided into 60 *puroks,* informal neighborhood associations without constitutions or bylaws but with a leader and a small council representing adults, youth, and schoolchildren. Each *purok* lets the *Times* know — by word of mouth or hand-carried note — what is happening in its area. Next come the market vendors, who spend most of their day at the center of social life, hearing and dispensing local information. Fil Mendosa, chairman of the vendors' association and owner of the store opposite the main central board, is a member of the five-man editorial board of the *Times*. He is also the paper's chalk cartoonist. Other members are the government adult and community education officer in the town, the priest, a policeman and a lawyer. The priest takes legal responsibility for the publication, and news from outside the community comes from the newspapers taken by the priest.

Production of one day's issue goes thus:

About 4:00 p.m.: copy for the next day is collected, collated, edited, and typed by one of the editorial board, usually the priest. A team of teenage girls at one of the central secondary schools delivers copies of the next day's news to the homes of primary-school teachers who work in the 12 *barrio* primary schools but who live in the *poblacion*.

About 10:00 p.m.: younger children, who aspire to one of the "line" jobs in the *Times* organization, clean all the boards of that day's news.

About 5:30 a.m.: one secondary school boy writes the copy prepared the day before onto a board in the church secondary school. This is copied by 13 other boys who then transfer it to the central board and the 12 smaller ones in the *poblacion*. Meanwhile the teachers, considered assistant editors of the *Times,* have reached their *barrios* and substitute one or two "central" items with purely *barrio* news. Their copy is given to "staffers" to write on *Times* boards in the schools. When school starts, other pupils copy the news into exercise books for transmission to their families later.

Thus, by midday at the latest, most members of the community have been exposed either verbally or visually to the contents of the *Times*. In the occasional event of a major news break — a typhoon warning, for instance — the church bell summons the *poblacion*-based "board boys" to collect new copy for a "replate" of their boards.

For obvious reasons, the size of the readership is difficult to determine, but eyewitness observation confirms that the boards are well read, especially in the cool of the morning as people go to work and to market.

Content of the boards is limited. There are at least five stories every day — a minimum of three hard news stories and two or three features. The hard news stories take the main display: a local story is always the lead, followed by a regional or national one, then by an international one. The main feature story is usually a "man-in-the-street" interview organized in advance through and by the secondary-school children. The other main feature is a short editorial, usually written by the priest (although purely religious themes are on Sundays only). Weekday themes are usually some aspect of local community life, and never overtly political. Only the international story is in English; everything else is in Cebuano.

Thus, the actual volume of information each day — about 500 words — is not great, certainly nowhere near even that of a one-sheet newspaper. But this in itself can have compensations in both readership and comprehension, especially when literacy may be fairly wide but not especially deep.

Given the pressures on space, editorial control is exercised strongly in favor of stories with a social or community purpose: thus, on the day Miss Universe was being crowned in Manila, the *Times'* main story was about an honest taxi driver who returned 4,000 pesos (U.S.$570) left in his cab. Miss Universe was a small story.

The *Times* carries no advertising, partly because of space limitations and partly because in a socially cohesive place like Moalboal everybody knows who's selling what anyway — or they can quickly find out. Another major reason is that basically the *Times* doesn't need to take ads. (And how many publications can say that?) The marine plywood boards initially cost about 350 pesos plus 50 pesos for paint. In seven years they have needed replacing once — by which time the materials cost had inflated to 700 pesos (U.S. $100). The only ongoing costs are for chalk, about 7 U.S. cents for 12 sticks a day, and 100 pesos (U.S. $14) for a fresh coat of paint every six months, depending on seasonal climatic ravages. Thus, the annual costs are U.S. $25 for chalk, U.S. $28 for paint and about U.S. $25 depreciation for the boards (assuming a four-year life) or a total of U.S. $78. (For the statistically minded, and assuming all Moalboalians read the *Times,* the cost per thousand of reaching this audience is U.S. $0.01187!) All the staff are unpaid, and paper expenses are borne by the schools.

But U.S. $78 a year is still more than 550 pesos in Moalboal, and that sort of money represents the cash value of 110 days' hard work. And the way in which the 700 pesos was raised when the boards needed replacing indicates how the people valued their blackboard newspaper. The priest simply asked for a collection to replace the boards — and the money was raised in two collections. (Until church collections were abolished, the average collection yielded less than ten pesos.)

So what are the problems? The climate — tropical with a pronounced rainy season although usually spared from typhoons — does not affect the boards as much as might be expected. True, they are wiped clean by driving rain but they say that in seven years there has not been even one day when it was not possible for the contents to remain visible for at least a few hours. One or two boards have occasionally blown down, but the community quickly had them restored. So, basically, the rains present no problem.

The human elements would appear more of a threat. But in the seven-year history of the *Times,* there have been only three instances of graffiti and only one of outright attack.

Political problems are avoided mainly by giving everybody access to the board. News from the mayor — the local representative of national government — gets its fair share of space, as does the news of all groups. Nobody is able to say the paper doesn't reflect his or her position. Access to the *Times* boards is based on nothing more than residence and willingness to get involved, a big plus in winning acceptance throughout the community. Over time, a sense of pride in the boards has developed: every one we saw was in good repair and clearly visible — something quite rare for the visual word in the Philippine landscape, which is often typified by semi-obliterated and rusting commercial signs.

The role of the *Times* reflects what has happened in Moalboal over the past few years. It is a symbol of the vitalized community as well as a contributor, and no newspaper anywhere can hope for much better than that.

■ **Jack Glattbach, Division of Information, UNICEF. A longer version of this article was originally published by CYCLE (P.O. Box 3923, Grand Central Station, New York, New York 10017).**

Close-Up on Distance Teaching in Lesotho

Designated by the United Nations as one of the world's dozen poorest countries, Lesotho has social and economic problems that are as difficult as its mountains to scale. Forty percent of the country's work force is employed away from home in South African mines, most of the rest of the employed eke out a living on overtaxed agricultural land, and only 60 percent of Basotho children under 14 receive any formal schooling.

But in addition to formidable obstacles to development, Lesotho also has a bootstrap service organization, the Lesotho Distance Teaching Center, that stands a chance of influencing the country's economic picture.

On hand at this unique educational resource depot are trained teachers, media specialists, community development workers, and full production facilities for print materials and radio programs. On request, LDTC provides affordable educational services tailored to fit local needs and rendered in a spirit of cooperation.

ORIGINS

The Center began in 1974 when Lesotho's Minister of Education asked the International Extension College to design and to recruit staff for a distance-teaching operation. The Government of Lesotho had for some years been considering the idea of giving correspondence education a broad backing and had already sponsored a few modest correspondence projects in Lesotho and expressed interest in several others. It had also cooperated with Michael Young of the IEC, who in 1973 had conducted for the Botswana, Lesotho, and Swaziland Correspondence Committee a survey of potential uses for distance teaching. Thus, when it called on IEC, the Government was prepared to lend the project full support — including radio time, franking privileges, and a ready ear.

Salaries and rent, however, cannot be paid out in good will and postage stamps. So a vital early task was to find external funding. The job, according to one IEC report, proved enough of an ordeal to chasten dreamers, if not optimists. For a year and a half, the Center scraped by on small donations from a variety of sources. Bilateral and unilateral aid picked up only in late 1975 when the Irish Government made a donation large enough to enable the Center to get off the treadmill of mere subsistence. This grant was followed up by a second from Ireland, one from the Dutch agency NOVIB, and support from the World Bank in the form of housing and equipment.

Finding qualified people to run the Center turned out to be somewhat easier than funding it. The IEC called Philip Baker from his post as deputy director of the Mauritius College of the Air (a "sister institution" of IEC) in early 1974. Under Baker's guidance, and later that of the present director Paud Murphy, the Center drew together a versatile staff of thirty administrators, production specialists, organizers, and tutors. While unsuccessful at first in its search for native curriculum writers, it has honored the commitment of its founders to use indigenous talent whenever possible. At present, the Center employs only six expatriots, some of whom are hard at work training their own replacements.

Precisely because fund-raising and recruiting were slow-going, LDTC developed realistic ideas about how much it could accomplish: grand schemes were from the beginning quite simply out of the question. While the Center's troubles should not be romanticized, temporary poverty did act as the crucible of good sense and ingenuity. With this in mind, the Center has adopted as its identifying symbol a picture of a flying molepe — a long-tailed bird that sometimes has trouble getting off the ground but that is otherwise well-equipped for flight.

The IEC

The International Extension College comes from the same intellectual stable as Britain's Open University. In the autumn of 1962, Michael Young, now chairman of the IEC, wrote an article and urged the creation of an open university to add to Britain's educational resources, then strained to capacity.

Nothing happened as a result of the article. So, a year later, Young established the National Extension College as a pilot for the open-university idea. When, in fact, the Open University was established by the British government in 1966, the National Extension College continued to exist, working at different levels and teaching different students.

Since its foundation in 1963, the NEC has received a steady stream of inquiries from overseas about correspondence education, or distance teaching. It tried to answer these as best it could, but the help it could offer the developing world was quite limited — advising visitors or correspondents from overseas and providing courses to bona fide *correspondence institutions when it looked as if these would meet their needs. While what the NEC could do was limited, the widespread interest in distance teaching in the later 1960s suggested that the developing world saw it as a possible solution to some of the educational problems it inherited as part of the colonial legacy.*

A preliminary visit to Africa by Young in 1970 confirmed that there were jobs that an international agency committed to distance teaching and its use to solve major educational problems could do. In 1971, with the aid of a grant from the Elmgrant Trust and the hope of one from the Ford Foundation, IEC was established. It now provides information and advice on distance teaching: the combined use of printed matter (usually correspondence courses), broadcasting, and face-to-face teaching. It is especially interested in the use of these techniques for nonformal education. ■ **From IEC literature**

RESEARCH

The Center tactfully made its first piece of outside business the attempt to find out both what other agencies were doing in Lesotho and what needs were going unmet. This initial legwork helped the Center to avoid unnecessary duplication and competition, to reveal its intention to work closely with existing organizations, and to open channels of communication with local leaders and citizens. Early community discussions, in turn, brought to the fore the Basotho people's keen interest in income-generating activities and their preference for cooperative rather than individual efforts — both of which have since been shaping forces in the Center's development.

Many of the Center's early projects were research-oriented, aimed at creating the data the Center needed to launch other kinds of activities. Two typical groundbreaking efforts were a small test of the efficiency of Lesotho's postal service and the compilation of all the figures relating to the distribution of newspapers, magazines, and leaflets in Lesotho. (LDTC shares this kind of generative information with many of the more than 25 health, education, and development agencies identified in its survey of resources and also circulates brief summaries of research conducted by these other organizations.)

COURSES FOR CREDIT

The Center sponsors two types of education projects. One type is designed to meet the needs of students studying for standard certificates. At the Junior Certificate level, students can subscribe to courses in mathematics, agricultural science, bookkeeping, and commerce. At the "0" (or college entrance) level, they can study modern math. By 1978, students at either level will be able to take courses in human and social biology, English, and Sesotho, while commerce and geography will become "0"-level options.

Students enrolled in LDTC's preparatory courses enhance their at-home study by listening to lectures broadcast over Radio Lesotho. They also attend intensive weekend-long sessions, receive a newsletter and "Learn to Study" booklets, and correspond with tutors (whom they may or may never meet). Typically, weekend courses are convened periodically by the tutors in their home villages.

NONFORMAL EDUCATION

The primary vehicles of "learning for life," as LDTC's nonformal education courses are sometimes called, are booklets. Funded and guided by public service agencies, the Center develops,

produces, and often distributes booklets on subjects ranging from crochet to baby care. (A staff member who did not know how to crochet wrote the how-to-crochet book, correctly figuring that teaching himself the art would help him explain it clearly and simply.)

Most booklets and other print materials are devised to meet a need uncovered by research. Some are then floated like new currency into the "educational market" to find their own value. Others are introduced as part of broader systematic campaigns on pressing social problems or issues.

LDTC's cookbook, written jointly with the Catholic Relief Service, is a project of the first sort. It was designed to reflect CRS's commitment to making the value of protein understood widely and was distributed along with subsidized high-protein foods at CRS's sixty clinics in Lesotho in late 1975. Twenty thousand copies at 5¢ each were sold within two months.

The impact of the cookbook has been hard to gauge. A survey of 101 women in the distribution area revealed that fewer than half had seen the book (though many had heard it mentioned on radio spots developed at the Center), that more than half the women who saw the book bought it, and that two-thirds of the buyers had tried one or more of the recipes included in the book.

The Center is approaching this information from various angles — trying to judge the effectiveness of the cookbook, its weaknesses, the validity of the survey, and the cookbook's representativeness of the booklet medium as a tool in adult education. In a similar exercise of thrift, it is using a survey of the audience exposed to the radio announcements of the publication of the cookbook to test the effectiveness of radio as a medium as well as of the nutrition message.

A road-safety campaign conducted in the districts of Maseru and Mafeteng in the spring of 1977 is a project of the second sort. At the behest of the police force and an inter-ministerial committee, the Center manned all fronts in this campaign. It produced posters, ten different radio vignettes, and a personal letter addressed and sent or handed to drivers. Dedicated to the proposition that drinking and driving do not mix, the multi-faceted campaign lasted two weeks and was followed immediately by a survey of 107 residents of the district.

The follow-up survey satisfied the LDTC staff that the campaign had been carried out successfully. It showed that 60 percent of those polled had heard the message over at least one medium, that 90 percent of those who heard the message remembered it, and that the great majority viewed the message and the campaign in a favorable light.

Suggestions for new editions to the Center's library of booklets on domestic science and family economics range widely. Manuals on vegetable-growing, leather-working, tree-planting, and latrine-building are all being considered. Popular demand will determine which is printed first.

Demand has also kept the Center's project-related priorities in flux. At the start, LDTC concentrated on meeting an obvious need for study courses for Certificate Exams, and it continues to pay special attention to the educational needs of unqualified primary-school teachers and of young drop-outs. But over time its emphasis has split, if not shifted, to give life-long learning activities of all types greater prominence. Recently, for example, it has run training courses for fieldworkers. These courses, a new spin-off of nonformal education activities, are requested and paid for by the agencies that employ the fieldworkers.

The Center's future direction, impossible to predict exactly, will both condition and reflect Lesotho's overall development strategies. Whatever direction it takes, LDTC appears to be a likely candidate for survival simply because it does not allow one positive force to overpower another. So far, the Center has been able to balance the tendency to diversify with the commitment to remain local, sound business practice with high ideals, and creativity with productivity. ■ K.C.

Selected LDTC Publications

Learn How to Study

Handbook for Fieldworkers

Training Village Distribution Point Agents in Lesotho

A Test of the Best Way to Present a Correspondence Lesson

Communications Support for Nurses

Self-Instructional Booklets for Rural Education

Housewive's Choices

The Use of Photo-Strips in Family Planning Education

Do People Read Leaflets?

An Experiment with Educational Radio Spots

Poultry-Keeping in Rural Lesotho

Understanding Print

Notes on Nonformal Education in Lesotho

Games to Learn By

Becoming a Service Agency — Points to Keep in Mind

Red Cross First Aid Book

What is the Census?

Your House and Mine — Our Village

Plant Beans & Make Money

How to Crochet

Education for Family Planning in Lesotho — Summary Report

All publications except *Understanding Print*, which costs U.S. $1.50, are available for the cost of postage from LDTC, P.O. Box MS 781, Maseru, Lesotho.

Seminars on Development Communications

Two seminars in development communications took place in West Africa in October. In both, officials from government ministries of health, education, agriculture, and planning together investigated how communication technologies might extend or amplify available resources in their ongoing or future programs.

Reaching dispersed or isolated rural populations, shortages of well trained teachers and extension workers, and the lack of adequate health-care facilities in rural areas are universal development problems. Therefore, seminar participants spent two days examining the histories of projects in which communication strategies have played a major beneficial role.

Among the case studies discussed were projects in which the burden of teaching primary-school mathematics was assumed by radio, those in which farmers received valuable planting information by radio and had the chance to respond with their impressions via audio cassettes, those in which study groups and radio messages significantly altered a nation's health habits, and those in which short-wave or two-way radio connecting paramedics and doctors brought diagnostic care and treatment to isolated villagers.

University-based experts from the United States and England were brought to Sierra Leone and Liberia to lead the workshops under a program sponsored by the U.S. Agency for International Development. Within that agency, the office that focuses on educational strategies using communication technology — the Office of Education and Human Resources of the Development Support Bureau (formerly the Technical Assistance Bureau) — plans to conduct a series of development communication seminars in various countries around the world. Sites will be determined on the basis of host-country requests. ■ **J.M.**

Call For Copy

Future issues of *DCR* will focus on needs assessment, learning games, and other innovative educational materials designed for use within and outside of the classroom, communication planning and policy-making, formative evaluation, and the use of media in agriculture projects.

Articles submitted to the editor by responsible persons with on-the-spot experience will be considered for publication. Highest priority will be given to materials that have not been published elsewhere.

Manuscripts on subjects other than those listed are also welcome, though special arrangements must be made for the return of any unsolicited manuscripts.

TWO REPORTS FROM DARTINGTON

Issues and Impressions

We met at Dartington Hall in September 1977 to talk about distance education for rural development. The setting is important. Dartington Hall is a medieval house set deep in the Devon countryside. The Hall and its estate were almost in ruins — literally and economically — when bought by Leonard and Dorothy Elmhirst in 1926. Since then the Elmhirsts, with the Dartington Hall Trust, rebuilt the house, revived the estate, and started a school and a college in a successful attempt to demonstrate rural development. Leonard Elmhirst had been much influenced by Rabindranath Tagore, to whom he'd been secretary in the early 1920s. When we at the International Extension College were thinking of holding a workshop on rural development for the exchange of ideas among those from different continents of the Third World, Dartington seemed an appropriate place.

We wanted to find a crossroads. Information still flows more easily from south to north than between east and west. Numbers of universities and research institutes in the rich, northern half of the world are astonishingly knowledgeable about rural development and education in the Third World. European and North American scholars can easily visit and learn something about life in Latin America and Asia. But it's far more difficult for people actually working in rural education to find out about work parallel to their own in other continents of the Third World.

Within continents there are already networks like the Latin American Association of Radiophonic Schools (ALER) and the African Association for Adult Education (AAAE) for the exchange of ideas. But education for rural development has grown up quite differently in the three continents of the Third World, from different intellectual traditions and from different ways of doing things. At Dartington, we were looking for a crossroads at which these different ways and traditions could meet.

The workshop lasted for a week. Participants ranged from the Tanzanian Minister for National Education to the Director of Farm and Home Broadcasts of All-India Radio to representatives of small educational projects aimed at only tens of thousands of participants. We were successful in keeping down the number of observers and scholars and keeping up the number of practitioners in distance teaching for rural development. We passed no resolutions, set up no international organizations, took no votes, but talked for seven days. The forthcoming report (to be available from International Extension College, 131 Hills Road, Cambridge, in early 1978, U.S. $5.00) will reflect our dialogue and concentrate on a number of issues many of us were facing.

Three sets of issues seemed particularly important at Dartington. There is value in defining them, though, of course, we were not seeking holistic solutions to them. The first is political. Many of our Latin American participants came from radiophonic schools whose work was at best tolerated and at worst obstructed by their governments. Such schools are independent of governments, often closely linked with the Roman Catholic Church, and in a number of cases follow policies that conflict with the class interests of

Aims and Actions

Michael Young set the tone of the conference by stating that distance teaching is the only viable means currently available to have education keep up with population growth in developing countries. He said that distance teaching should be a cheaper means to provide that education, should be able to provide high quality and not just rote learning and, through personal contact, should allow the learner to be flexible in what he learns.

But, it should also be pointed out, exponents and practitioners of distance teaching have to solve a number of problems. How can agricultural and health extension workers become involved in distance-teaching systems? How can village leaders be recruited and trained to head local groups? What is the best mix of media in different distance-teaching situations? Can the advantages of radio campaigns be combined with those of radio schools to meet the felt needs of rural people? How can governmental agencies be convinced to adopt distance teaching on a wide scale and, if they cannot, how can distance teaching be organized in different societies?

The conference did not address these questions directly, but the experiences of different conferees spoke to a variety of the problems. One theme that emerged in the early remarks of Michael Young (and that was alluded to a number of times but never resolved) touched on the continuity and organization of learning. Campaigns are short-lived but often have considerable impact. Farm forums touch on many topics but with no particular sequencing. Radio schools, on the other hand, often try to provide some of the organization and sequencing of more traditional instruction but have problems with people dropping out and dropping back, and losing the thread. One possible solution mentioned is the creation of shorter, self-contained modules of learning that can be broadcast over a short period. The radio school of INCUPO in Argentina tries to do this. Rather than having health, agriculture, and nutrition programs running continuously, it has a short (two-to-five week) series on topics in just one area at a time. Another approach that may speak to the problem of combining different approaches is that taken by Radio Santa Maria in the Dominican Republic. Conceiving of their radio station as a resource to serve many rural needs, the station offers programs that are strictly instructional and continuous (primary-school equivalency), others that are nonformal but still somewhat organized, campaigns that last short periods, and open broadcasting that offers relevant information, as well as news and entertainment, to listeners each day in their homes.

CONFERENCE AIMS AND THEIR REALIZATION

The conference's first aim was to bring together participants from distance-teaching institutions all over the world to share experience in rural and nonformal education and to compare practices.

The principal representation at the conference was from Africa and Latin America. The differences between these two areas of the world are reflected in the differences of the distance-teaching methods employed in each. Most of the distance-teaching efforts in Africa are *government* efforts, while most of those in Latin America are *non-government* ones. In Africa, there does not yet exist the class of elite that one finds in Latin American countries. African countries are poor and, while the little wealth available may be distributed inequitably, the social structure differs markedly from that in Latin America. Latin America has more developed wealth but, socially, that wealth has created an enclave that does not favor popular schemes of development. Because these enclaves generally wield political power as well, development efforts are left to private groups, and in Latin America these have been church-related. In Africa the church has been less developed (though in places like Eastern Nigeria, Lesotho, and Uganda, it has helped further education significantly), and the governments have had a broader outlook in terms of development.

The second aim was to draw from the participants' collective experience conclusions about the potential and relevance of distance teaching to alternative systems or patterns of nonformal education.

No doubt the participants see the potential and relevance of distance teaching and see themselves as part of a common effort being carried out in many countries. The commonality of work and the recognition of the present inadequacies of educational systems (including distance-teaching projects) both encourage and challenge them. More than anything, the conference placed new questions in the minds of participants — about programs not yet tried, about possible solutions to long-standing dilemmas, about the relationship of distance teaching to development.

The third aim was to provide information about such alternatives to countries and institutions now looking for new approaches to rural development and to work out practical guidelines for applying them.

their governments. In contrast, the African and Asian participants from government and university institutions were from countries whose governments had at least a formal commitment to rural development. Thus, the Latin American schools are free from governmental control but have constantly to decide how far they can go towards land reform — the basis of any genuine rural development — without being closed down. Most of the institutions from Africa and Asia are subject to tighter control by government, but are not faced with such stark contradictions between government policy and the needs of rural people. They had to determine for themselves appropriate political stances.

The second set of issues was social. The problems of the countryside need to be solved in the countryside. (And so, if a rural education project is to be any good, it can't be planned and organized in its entirety from a capital city.) But the demands from students — the needs of participants — are not so clear-cut. Basic education, designed to enable rural adults to increase their control over their own lives, with a view to improving the lot of the rural community generally, also enables people to leave the countryside for the town. Education to strengthen and help the rural community cannot be separated from education that helps people to leave that community. Education may easily, if unintentionally, help create town slums or increase urban overcrowding, and fail to help rural development. What sort of education should we be offering was at least as important a question to us as questions about the methods of education.

We also discussed several sets of educational issues. A particularly difficult set concerns the curriculum for nonformal education, and here we found that there may be Latin American answers to African questions. It is easy enough to design an educational project to meet a specific need — a limited change in agriculture or a small improvement in health practice or an innovative literacy project, for example. And, between us, we had a fair amount of experience on the use of distance teaching for such jobs. But education, if it is to be effective and liberate people from the constraints of ignorance and the greater power of those more educated than themselves, demands more than the knowledge of odd bits of improved practice.

Traditionally, education has depended on the sequential mastery of knowledge that builds up into a versatile intellectual framework, relevant and applicable to new problems. That is what the orthodox six or seven years of primary schooling is all for.

How, then, do we create an out-of-school system that reflects the needs and interests of rural people but also builds up to an equivalent basic education? Latin American radio schools have gone part of the way, though hampered by the diploma disease, with rural curricula leading to equivalency examinations. There's hope that countries like Mozambique and Tanzania with a genuine national commitment to rural education will show us a clearer way forward here, building on the Latin American experience but advancing from it. We live in hope. The workshop increased our hope and justified our faith that the methods of distance teaching are effective enough for us to concentrate on those more interesting, and more difficult, kinds of questions.

■ **Hilary Perraton, Co-Director, International Extension College, U.K.**

In pursuit of this goal, the conference participants were divided into seminar groups, focusing separately on Jamaica, Lesotho, Dominica, and Mozambique. Projects represented by delegates from those nations received the ideas and reactions of the group. The problems of each country differ. India, with 610 million people, contrasted most sharply with Dominica (population 80,000), but the necessity of providing fuller human life for citizens of those nations and the attempt to use distance education to do so supplied the rationale for the exchange of ideas. As a group, we could not issue a set of directives that would be universally applicable, but a synthesis of some of the principal themes will be prepared by the IEC.

One point of consensus was the need for all the aspects of distance teaching — broadcasting, correspondence, and face-to-face contact. In particular, the conferees voiced their conviction that personal contact could *not* be dispensed with. India has particular problems with face-to-face contact, given its vast population. While for some general information campaigns All-India Radio was satisfied with broadcasting, the Indians recognize the need for fuller contact with the villagers to promote the more salient aspects of human development. The experiences of Latin American radio schools and of the radio campaigns in Tanzania and Botswana represent validations of the full model of distance teaching.

The fourth aim was to work out ways of continuing the exchange of information and experience.

In the closing session, the chairman of the IEC suggested ways to maintain the impetus begun by the meeting. After discounting the usefulness of forming a "world association of extension education" in light of the proliferation of such groups already, he proposed forming an informal group with continuing ties (perhaps with a link to the International Council of Adult Education in Toronto) to deal with such questions as these: What would be the functions of such a group? What kinds of mutual aid would be provided? Would this involve short-term exchanges of staff? How would funding be arranged?

No general conclusions were formally adopted at the meeting. But all supported the idea of holding another meeting in two years' time and the idea that visits of Latin Americans to Africa, Africans to Asia, Asians to Latin America, and so on would be a valuable means of maintaining contact and exchanging usable information. Work exchanges did not get strong backing, because of their artificial nature and because of language problems. It was also suggested that future meetings be held in developing countries, where a concrete distance-learning project can be both the centerpiece and point of reference.

EVALUATION ISSUES

Evaluation was not a principal topic of this meeting; it is a subject that the participants recognize as important, but few have had to deal with evaluation seriously as yet. The process of goal-setting and goal-measuring becomes increasingly urgent, however, as funding shortages raise issues of accountability. In general, distance teaching has the aura of a "good thing" about it because it is aimed at giving people who are hard to reach information that they sorely need. Distance teaching uses radio, and so it benefits from an association with "technology responding to human needs." Part of this aura is the common faith that as technology has produced solutions to many human problems, so too it will produce a solution to the wide lack of adequate education. Persons working with distance teaching benefit from the prestige accruing to technology.

A second factor insulating distance educators from rigorous evaluation is the coverage that broadcasting provides. This is especially true of government-run projects. Given the needs of scattered populations for education, the use of distance-teaching methods seems proper. These methods have a reach beyond all other current systems because they contain broadcast components. Politically, they demonstrate concern about broad coverage by using a broad method.

OVERALL IMPRESSIONS

This was a valuable meeting, mainly because it brought together practitioners. The level of discussion was concrete and rooted in the participants' own experience. For those with extensive training, as well as for those who had learned in the field, the project focus represented a common point of reference.

Participants learned from each other. The seminars that focused on particular nations afforded the participants from those nations a kind of group consultancy, one that seemed well appreciated. It was these sessions that provided whatever specific ideas and plans the conference produced. Overall, participants benefitted from their association with far-flung colleagues and from the reinforcement that the group gave to both general goals and general methods.

■ **Peter L. Spain and Emile G. McAnany, The Institute for Communication Research, Stanford University**

A Communicator's Checklist

1 The most purposeful way to bridge what is identified on the flyleaf of Juan Bordenave's latest book as the "gap between theory and practice in rural-development efforts involving communication media" is to hazard a few generalizations on the efforts made so far. But, since the meaning of "development" is elusive and subjective, those who would serve the truth must serve up the facts.

The facts, in this case, are project descriptions and evaluations, ten of which fill sixty pages of *Communication and Rural Development*. Bordenave does not start cold with hard data, however. Instead, he devotes the first section of his book to an overview of the evolution of communication theory as it applies to rural development. In a brief and readable account, he provides a means (history) of reckoning with communication issues in general and with the case studies that he presents. He guides the reader through what to a lesser mind than his might seem a morass, making the replacement of mechanistic models of communication first by structuralist and later by systemic models seem natural, even logical.

So skillful is the thumbnail history, in fact, that the case studies themselves — which include reports on ACPO, India's farm forums and PEIFEDER, among others — are disappointing in comparison. No doubt at least partly because the source materials varied widely in thrust and emphasis, some of the profiles seem to resist the format they share. Moreover, opportunities for smoothing out the differences by paraphrasing or editing the material have been passed up. The problem is not merely stylistic: the reader naturally wonders if the sources could have been handled more critically and carefully.

Such doubt is only partially allayed in the third section. That the generalizations Bordenave offers are for the most part more negative than the case studies is disturbing.

Bordenave appears to have read between the lines perceptively, but the reader probably will not reach the same conclusions using only the case studies at hand and so is left with the nagging suspicion that something important has been left out.

These complaints aside, several ideas that warrant close study do emerge from the concluding analysis. Bordenave notes, for example, that none of the ostensibly typical projects reviewed in Part II was requested by the people it was designed to help. Like others before him, he challenges the wisdom of testing brainy ideas for projects on people whose true needs have either been neglected or left to find expression by outside observers. In like vein, he makes much of the fact that virtually all of the projects described in the case studies failed to make full or adequate use of "change agents" in the field.

Bordenave's musing on the use of media in the ten projects discussed, perhaps the strongest section of the wrap-up, gells into seven related points that reflect both experience and insight. Chief among them is that the communication components of the projects too often resemble fine shoes that don't fit, that the intrinsic value of a medium is frequently accorded more weight than its value within a particular context.

The last word in Bordenave's book is devoted to research, but this section represents scarcely more than a postscript. The generalization toward which the analysis moves comes in the section on utilization (subtitled "diffusion"). It is that communication programs follow one of three strategies — emphasizing the flow of communication among rural people, the use of communication to facilitate positive social change, or both — and that the combined approach, "rural communication-education," should be used exclusively in developing countries.

In all, the presentation of the case studies leaves much to be desired and the analysis only a little. Had the reverse been true, this book would have taken its place beside many others of the kind whose arguments never quite reach their destination. As it is, *Communication and Rural Development* suffers serious losses of credibility along the way but manages to drive its main points home in the end.

Communication and Rural Development can be obtained from UNESCO, 7 Place de Fontenoy, 75700 Paris. ■ **K.C.**

2 Two recent publications offer some indication of the current status of book publishing in the developing world. Both are published by UNESCO, which has a long-standing interest in book promotion worldwide.

The Economics of Book Publishing in the Developing World by Datus Smith shows how both the small size of reading publics and scarcities of marketing and management skills keep book publishing a relatively low volume and high cost endeavor in most countries. Results of an extensive survey are reported and recommendations are listed for improving the current situation.

"The Impact of Transnational Book Publishing on Knowledge in the Less Developed Countries" *(Prospects,* June, 1977) by Keith Smith maintains that the global reach and market power of international publishers often stymie national publishers. However, in the large internal markets, such as that for primary-school textbooks, many countries do their own publishing, often through state monopolies. Light fiction and study "cram books" are two other markets that the international concerns have not generally entered.

Smith laments what he terms the metropolitan orientation of the international publishers, and its impact upon their selection of manuscripts and their marketing strategies. However, he notes that international concerns often publish controversial developing-country authors with whom national publishers are afraid to work. He also praises the international understanding that results from the presence of the international companies.

Both *The Economics of Book Publishing in the Developing World* and *Prospects* are available through the national distributors of UNESCO publications. Prices will vary. ■ **J.G.**

3 Harry Kybett's book provides the layperson with useful technical information on videocassette machines. The author describes the various machines in common use, emphasizing the U-matic format introduced by Sony, but also including cartridge systems, the Philips cassette system, and the new Sony betamax half-inch home-use system. The book includes chapters on basic operations of the equipment, procedures for maintenance, and trouble-shooting. Also covered are several technical chapters that discuss various interconnections of equipment, videocassette electronics, and input/output circuitry.

Although the book contains much useful technical information and is well illustrated with easy-to-follow diagrams, its organization makes the content hard to follow. The author states he is writing for non-technical users such as educators, students, and industrial users, but he does not approach the subject from the users' point of view. Instead, he jumps from common sense instructions likely to be found in an equipment manual to detailed discussion of electronics and back to simple maintenance. The author points out some of the shortcomings of videocassette technology, such as cueing and editing difficulties, but does not provide sufficient step-by-step guidance on procedures and modifications — he does not, in short, make sure the user can carry out his suggestions.

This is not a manual on how to produce videotapes. Its most valuable information is in the chapters that describe the various components of the recording machines and cassettes. Equipment modifications suggested by the author require access to electronic components and should be attempted only by a person with some technical knowledge.

The Complete Handbook of Videocassette Recorders can be obtained from TAB BOOKS, P.O. Box 40, Blue Ridge Summit, PA 17214 for $5.95 (paperback). ■ **Heather Hudson, Academy for Educational Development**

4 In a perfect world, an annotated bibliography would be well-structured, easy to use, comprehensive, and shot with critical insights. It would be fair but would not pretend to objectivity, since readers use such bibliographies to dismiss the irrelevant as well as to track down the valuable. For the immediate future, a bibliography such as Peter M. Lewis' *Video In Non-Formal Education,* which meets most of these criteria most of the time, is welcome.

Lewis helps readers get their bearings in this 100-page work by spelling out his assumptions, setting the boundaries of the discussion, and defining the terms used throughout. He also devotes several pages to capsulizing recent thought on the social impact of video and to briefing decision-makers (for whose use the book is primarily intended) on video's potential and drawbacks. In particular, he forewarns readers that his interest resides mainly in applications of video suitable for use in the Third World and reveals that his own approach is informed by his experience as a practitioner.

Individual bibliographic entries combine coverage of projects with that of reports and institutions. Quotations are abundant and the bibliographer's comments, often as not questions or asides, are set off from the summaries. The items are categorized by region and vary in length from two lines to two pages.

While the introduction tends to be knotty when it is abstract, Lewis' much-needed study is for the most part carefully wrought. Its worth, in fact, prompts one to hope that its existence will be made widely known so that others in the field add to rather than duplicate Lewis' effort.

"Video In Non-Formal Education" (ED-77/WS/126) can be obtained from UNESCO's Division of Structures, Contents, Methods, and Techniques of Education, Section MMT, 7 Place de Fontenoy, 75007, Paris, France. ■ **K.C.**

5 Two books of essays grew out of the Aspen Institute's six-part conference on TV held in 1974 and 1975. Both deal with the medium of television as it is used in the United States. Both list only Americans as contributors. And both require of readers more than a passing interest in American society and culture. What's more, a few of the essays in each volume may escape the grasp of those unfamiliar with American commercial TV fare, whether they live in New Delhi or New York.

But all with a stake or interest in the future of television will find and value in these volumes the first stages of the sort of unrelenting interrogation of TV that must be sustained if the medium is to be freed of its inhibiting image as technology's joyrider and the arts' dumb relative. They will also find a crude map and history of TV — navigating aids of inestimable worth on such new and fragmented terrain.

Television as a Social Force: New Approaches to TV Criticism and *Television as a Cultural Force* form what rhetoricians call an argument by example. They are at once both pleas for a "higher criticism" of television and examples of that higher criticism, and the contributors hone their critics' tools by wielding them. Thus, the essayists who examine specific shows and trends are in a sense one jump ahead of those whose focus is on the medium in general or on the socio-cultural context in which the medium is used. To go just one step farther, as a few contributors to this discussion do, is to hold that television producers and technicians have left the critics behind, a perfectly reasonable but nevertheless unsettling idea.

Just how unsettling the notion that there may be more to TV than meets the eye and ear can be is a subject to which commentators turn again and again in these books. In particular, many of them chide their fellow journalists, academicians, educators, and art critics for holding TV in contempt and thus stunting its creative growth even as its popularity rises. Such willful blindness to TV's potential, the argument goes, is willful blindness to its potential impact — a political, if not aesthetic, mistake. (In *Social Force,* related political questions surface: Michael Robinson contends that total reliance upon TV as a news source is ultimately depoliticizing, and Richard Adler cites Joseph T. Klapper's speculative finding that "pervasive mass communication functions far more frequently as an agent of reinforcement than as an agent of change.")

The notion at the bottom of this contempt (that the mass media are the crass media) might strike some in the Third World, where TV ownership has completely different connotations, as novel in the extreme. But thinking that stops here will not carry the point. For TV's detractors may be far more vocal than numerous (in the United States, the college-educated, from whose ranks most TV critics come, watch more TV than do high school dropouts). Thus, the central issue is that a statistically insignificant but otherwise powerful group is passing judgment on a phenomenon that it does not, apparently, understand: for whatever else TV is, it is popular.

It can, of course, always be argued that critics never know what they are talking about or that no one need heed critics. But the case of TV criticism is special for at least two reasons. First, as the composition of the roster of writers in these two volumes confirms anew, most TV critics know more about something other than TV (usually journalism, public opinion, literature, or education) than they do about TV itself. They tend to earn their authority in one field and to exercise it in another. Second, most U.S. TV, unlike most of the arts to which it is unfavorably compared, is commercial and made to order. Hence, TV critics are perforce more than arbiters of taste; they necessarily become agents of economic and social change, affecting production as well as consumption. (Even with respect to TV in Third World countries, the first point holds insofar as the burden of broadcasting often falls to transportation or education experts, and the second applies when amended to read government for private broadcasting corporations and critics.)

In general, the writers represented in these books share the conviction that TV must be taken seriously as a vehicle of information and as a labor-saving device. Most even lobby gently for its acceptance as an art form. Only one actually says that critics need be diehard fans of TV, but the assumption underlies many of the best essays in the collections.

Besides that of legitimacy for the medium itself, a few other cries reverberate throughout these essays. One is for the "long view," for criticism that takes as its subject programming trends or a type of program or dozens of episodes of a series rather than a single program; this approach, of course, leads to discussions of values and history and the transmission of culture. (Robert S. Alley's "Media Medicine and Morality" and Sharon Lynn Sperry's "Television News as Narrative" in *Cultural Force* are examples of precisely this kind of criticism.) Another is that for using the TV critic's column to expose lies and errors as well as to praise and damn. This is a variation of a call heard in other quarters: for criticism that leads to self-examination as well as to judgment.

Not all the motions raised in these two books are seconded. (Peter H. Wood's provocative "Television as Dream" in *Cultural Force,* for example, has no sequel.) But something like a consensus does emerge from discussants who seem open-minded but anything but like-minded. And this consensus leads the reader to hope, if not exactly to believe, that "higher criticism" (and thus higher TV) is indeed in store, if for no other reason than that a need for it has been so well articulated.

If any flaw marks books so free of cant and so full of ideas, it is that each is separated only artificially from the other. While *Social Force* contains one essay on TV and politics and *Cultural Force* two papers of a distinctly literary bent, the split of the essays into two volumes seems to be a concession to the marketplace rather than an organizing device. On the other hand, each book stands alone, and the appropriateness of half-hour essays that are uninterrupted by commercial messages, that jump from subject to subject, and that together constitute one evening's worth of stimulation does not go unnoticed.

Television as a Social Force: New Approaches to TV Criticism and *Television as a Cultural Force,* both edited by Richard Adler and Douglas Cater, can be purchased in paperback for $4.95 each from Praeger Publishers, 111 Fourth Avenue, New York, New York 10003. ■ **K.C.** →

6 While such innovative materials would seem to defy even twisted cliches, the kit called *Working with Villagers* is proof that the medium is the message and that covers say quite a bit about books.

Basic workshop materials decked out in primary colors, this package was designed for use in training fieldworkers in home economics (broadly defined as all local activity that bears on the well-being of the family). The kit has four parts (a trainers' manual, a series of prototype lessons, a media resource book, and a sourcebook for teachers), three uses (to help fieldworkers master adult-education techniques, incorporate the family-planning message into traditional home economics, and produce their own teaching materials inexpensively), two sponsors (the American Home Economics Association International Family Planning Project and the East-West Communication Institute), and one unifying theme (that family planning is a basic determinant of the quality of every villager's life).

Although put together by a committee, *WORKING WITH VILLAGERS* is seamless and for the most part coherent. To read the *Trainers' Manual* does require heroic acts of imagination of the sort that good cooks can sometimes muster. Bare outlines and fine ideas suffice only when the reader-user has a reserve of experience to draw upon, and the novice may flinch at the many appeals to "good judgment" made in the manual. But the omission of spoon-fed detail is less a shortcoming than the reflection of an editorial decision; this book was not intended to train the trainer along with the trainee and was not allowed to attain the size of an encyclopedia.

In contrast to the *Trainers' Manual,* the volume of prototype lessons on infant and toddler nutrition, decision-making, family food supplies, family relationships, and family planning is virtually self-explanatory. It contains indexed sample lessons that easily lend themselves to translation, modification, and duplication. Along with a statement of the problem, a list of the ideas that deserve emphasis, and a list of materials and supplies that could facilitate learning, each lesson plan gives the trainer suggestions for ways (other than conventional testing) of finding out whether the audience got anything out of the session.

The *Media Resource Book* includes 19 skill exercises on such basic aspects of graphic production as cutting, lettering, drawing, and tracing. It also features discussions of the creative use of the blackboard, the flannelgraph, and the flipchart, and easy-to-follow discourse on the principles of color and design. With or without artistic talent, fieldworkers (for whom this component of the kit was designed) will probably be able to make repeated use of the hundreds of common figures that can be traced or copied from this book.

The *Sourcebook for Teachers,* which appears to have been developed as part of another curriculum project but which fits well in this package, contains classroom exercises on the same subjects as the prototype lessons. Comprised of four booklets and a resource catalogue, it is a small reference book of suggestions whose ultimate worth will probably be determined by the user's energy and ingenuity.

Like any unfamiliar medium, this collection is momentarily disorienting. But novelty is played off against forethought and sound pedagogy in its pages, so it will probably be used as widely as it is distributed.

Working With Villagers, which comes in a transparent plastic envelope, can be obtained from the American Home Economics Association International Family Planning Project, 2010 Massachusetts Avenue, N.W., Washington, D.C. 20036, U.S.A. for $15.00 including postage. Its parts are also available separately. ■ **K.C.**

7 Must a book with 125 photographs and 75 diagrams, jacketed in a bright blue and white cover be aimed solely at the popular market? No. Andreas Fuglesang works very hard to use relevant photographs, diagrams, and spartan text to present his — and others' — ideas about "applied communication," but his fourth and latest book on the subject, *Doing Things . . . Together,* is not for the passive reader.

Fuglesang's book is about the fundamental issue of Third World development: how to move in an orderly and humane fashion from present rural conditions, deemed unacceptable by many, to a condition of improved living standards without degrading human and natural resources in the process. The term "Another Development" is used by the Dag Hammarskjold Foundation — and echoed by Fuglesang — to describe the process of change within a harmonious, interactive structure. Fuglesang's basic theme is that fundamental change is needed in both decision-making and in the societal communications fabric and that Appropriate Technology — sometimes called Alternative Technology — represents a possible starting point.

Fuglesang's thoughts are in tune with those of Western young people who, though full-fledged members of the television and computer generation, have taken to the countryside or craft cottage to live a simpler, pastoral life and to feel greater control over their destinies. Readers may be put on guard lest Fuglesang's implicit romanticism, which he is quick to admit may exist and which is easy enough to entertain at United Nations Plaza, crumble when tested against the hard realities of rural Mexico, India, or the Sudan.

Yet, Fuglesang quiets our doubts on this count soon enough. In the middle part of the book, Fuglesang is careful to place Appropriate Technology within the larger context of process — a jumping off point for looking at more fundamental issues. He prevents us from getting bogged down in yet another "hardware"-oriented stage of thinking (educational technology still bears this cross in too many instances). By treating Appropriate Technology as process, he has prepared us to move along to consider the more abstract notion of the position of the individual in society and of small groups within the larger context of the nation — particularly the nation with the scattered, decentralized populations so common throughout the rural Third World. Many related issues then become relevant and are touched upon by Fuglesang — belief systems, linguistics, and politics. Rather than treating them as isolated, academic subjects, he stresses their inter-relationship with development.

Fuglesang's experience in rural Africa and elsewhere enables him to temper his theoretical framework with realism and with sensitivity to ordinary people. Indeed, the strength of the various Hammarskjold-sponsored seminars/workshops in general is that they usually involve those who deal with practical problems of development, rather than those whose idea of problem-solving is paper-pushing. (It is clear also that the Hammarskjold Foundation permits Fuglesang to express his views freely. This is not an institution dominated by a cautious and conservative bureaucracy, but one that gives a single individual leave to dominate all phases of a book's production — a rare publishing occurrence. This is a personal document, in the end almost a letter to an unnamed friend.)

But the earlier warning should be repeated. Fuglesang is exploring in highly abstract terms new societal groupings as a prerequisite for development, and his style makes the reader proceed slowly. While direct and quite free of jargon, it requires close reading at times. His is not a style that requires repeated reference to a dictionary, but it does force the reader to refer to personal experience to confirm or deny the arguments presented. In short, be prepared to pause and reflect along the way, taking in the photographs and diagrams.

Those looking for an analysis of the role of communications in the context of Appropriate Technology will be disappointed with Fuglesang's book. But they will be rewarded to find a broader perspective from which to contemplate the place of the concept of Appropriate Technology within the framework of decision-making and within participatory efforts by villagers in creating their own destinies. And that is a more significant aspect of development than communicating a hundred and one uses of discarded kerosene tins.

Doing Things . . . Together is available from the Dag Hammarskjold Foundation, Ovre Slottsgatan 2, S-752 20 Uppsala, Sweden for Sw. Kr. 40 (about U.S. $8.25) by surface mail or Sw. Kr. 50 (about U.S. $10.25) by air mail. ■ **David Giltrow, United Kingdom**

Dilemmas (Continued)

conference held outside of Country X many months after I made my recommendations. To my horror, I found out that both the well-qualified fieldworker and the official who asked me to investigate the research methods had been fired, while the incompetent researcher had been kept on to carry out the survey single-handedly.

I also found out that the supervisor had defended the incompetent researcher when pressed by the home office of the sponsoring agency.

Apparently, somebody somewhere owed someone a favor. It was rumored at the conference that the incompetent researcher was in the good graces of the project supervisor because he had been recommended for the job by a friend (the same person who saw to it that the regional official lost her job). Whatever the real reason, it strikes me as a shame that the obligation to the villagers did not outweigh that to the friend.

Perhaps dilemmas like this one can never be completely avoided. But the sponsoring agency could have taken a few simple and neutral measures (such as examining all applicants' credentials with care) that could have called this ill-suited individual's qualifications into question before he became entrenched in the project. At any rate, the agency should in the future require detailed resumes (of both work and academic experience) so that one type of professional is not called in when another type is clearly needed and so that favoritism is kept in check. ■

Cheap & Easy

HECTOGRAPH

Lindy Layer

This is one of the cheapest short-run reproduction processes. Hectograph is the original name for spirit duplication or the ditto process.

To construct the "machine," you will need the following materials:

2 shallow rectangular baking pans
Dry gelatin
Glycerine

PREPARATION

Mix 8 teaspoons gelatin into 1¼ cups of water (or corresponding proportions: 16/2½). Cook in a double boiler to let soften. While gelatin is dissolving, warm up a pint of glycerine. Add the glycerine to the gelatin and cook in the double boiler for ½ hour over medium heat. Pour the mixture into one of the rectangular pans. Let it cool for 24 hours. This mixture can sometimes be purchased in office supply stores.

STENCILS

Stencils can be purchased or ordered through office supply stores. They are carbon-backed and come in various colors. The purple, red, and green reproduce best. They cost about 10¢ each or less.

With the hectograph, you can use more than one color to add emphasis or make your visual more attractive. Prepare each section on a different master.

NOTE

The hectograph, unlike regular ditto, is a REVERSAL process. Prepare your stencil from the BACK. The carbon image on the master will be RIGHT READING. The image on the gelatin will be REVERSED; the image on your copy will be RIGHT READING.

PRINTING

Roll your master(s) onto the gelatin. The images will appear on the gelatin. Now roll your paper over the images. For transparencies use frosted acetate and, when the ink has dried, spray to clear with plastic spray.

The second pan is used for a cover! If possible, keep a piece of waxed paper over the gelatin. Just let the mixture sit. The carbon images will work their way down through the gelatin. If you have to print more than one page at a time, make a series of hectographs.

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Women in Development and The Media

Women from 20 developing countries and several Western nations met in Houston in mid-November to exchange ideas and to hammer out strategies for strengthening women's voice and power in the development process. Invited representatives met for four days under the auspices of the U.S. State Department's Bureau of Education & Cultural Affairs, U.S. AID's Women in Development Office, and UNESCO at the site of the U.S. National Women's Conference.

AID's opening, filled-to-capacity session focused on identifying the basic needs and issues of women in development. Panels of consultants and Third World guests delivered hard-hitting indictments of the status quo and called for greater access for women to vocational training programs, leadership and planning positions, and male-dominated careers. Panelists also fielded pointed questions from an audience whose shared sense of urgency offset and finally overtopped differences of opinion.

Subsequent sessions dealt with a wide range of issues, including child care, the part women in developed countries can play in helping their poor-country counterparts, and the need to involve men in development activities aimed at improving women's lot.

The consultation closed with two sessions, one a panel discussion on the changing roles of women worldwide. Moderated by U.S. journalist Perdita Huston and addressed by Margaret Mead among others, the open meeting attracted hundreds of women from the U.S. national conference. Cries heard again and again during the four days took on a sharper edge in this wrap-up and were followed by specific and concrete suggestions for meeting women's long-range and short-term needs. Changes in women's status since the IWY conference held in Mexico City in 1975 were assessed, the legal obstacles and solutions to women's entitlement were laid out, and the problems of strengthening the ties of women in the face of strained diplomatic relations were hashed over.

The UNESCO-sponsored segment of the conference culminated in a workshop on women and the media, which was chaired by Barbara Good and Bill Harley of the U.S. National Commission for UNESCO. Workshop participants considered the impact of U.S. mass media on Third World women and strategies for strengthening the power and correcting the image of developing-country women in the mass media. Media professionals attending this session were also asked to react to and amend the media guidelines proposed by the IWY Media Committee in 1975, which are presently being revised.

Further information on the AID-sponsored portion of this consultation can be obtained from Arvonne Fraser, Coordinator for Women in Development, Agency for International Development, Washington, D.C. 20520. Additional information on the Media Workshop is available from Yvette Abrahamson, UNESCO, 7 Place de Fontenoy, 75007, Paris, France; Barbara Good, Program and Information Officer, U.S. National Commission for UNESCO, U.S. Department of State; or The Editor, *DCR*. ■ **K.C.**

Development Communication Report, published quarterly by the Clearinghouse on Development Communication, is distributed free to over 6000 development professionals.

A center for materials and information on important applications of communication technology to development problems, the Clearinghouse is operated by the Academy for Educational Development, a nonprofit planning organization, and supported by the Development Support Bureau of the U.S. Agency for International Development as part of its program in educational technology and development communication.

Readers are invited to submit typed manuscripts of no more than 1000 words and to send in photographs.

Dilemmas in Country X: Candid discussions about failures

The fourth contribution to this column is the first written by a communication specialist from a developing country. The story, submitted anonymously, is based on the age-old theme of politically protected ineptitude. But it also has a twist that marks it as modern — a key official involved in the events described is a woman. An insider's view, this narrative ends with a caveat, a constructive suggestion, and a knowing sigh.

(The editor invites readers to submit reports for this column. Authors' names — as well as those of the people, agencies, and countries involved in the projects — will be withheld upon request.)

About three years ago, I was summoned from my post as an advisor in a middle-sized rural development institution in Country X by a district government official. A dedicated person with a proven interest in and knowledge of rural development, she expressed grave doubts about the validity of a research project being sponsored by an international aid agency in our country. When I showed my interest in the future of the project, she laid the facts of the matter before me.

She told me that a three-person team was currently conducting a survey of ten villages to determine the felt needs of the villagers, most of whom depended upon agriculture for their living. She also told me that the preliminary results of this research effort aimed at helping planners implement a new nonformal education project were inexplicably at odds with those of past studies and, she added rather hesitantly, with her own observations. She then expressed faith in my powers of judgment, my knowledge of rural development, and my ten years of experience in running such studies. On the heels of this praise followed the request to see what I could find out about the research methodologies being employed in Project Z. She said I had ten days and her blessing.

I thought I was pressed for time, but it actually took less than ten days to discover the problem. I saw immediately that one of the three people charged with carrying out the survey was well suited to the task: he understood the local culture, the general state of agriculture in Country X, and the weaknesses of the 30-item questionnaire the team was administering orally. The second member of the team was a different story. He was personable and cooperative enough, but he didn't know the first thing about rural development or about social-science research. Trained as a linguist, he was more interested in local dialects than in local development problems and had little professional motivation to carry out the survey in a way that served the goals of the sponsoring organization. It seemed at times, in fact, as if he simply had nothing better to do or had his mind on his paycheck. The third member of the team acted mainly as a supervisor. He had visited the project area briefly but was not engaged in any of the fieldwork. When I met him in the regional capital before I interviewed and observed the other two team-members, I felt that he was well-versed in the particulars of project operation but not especially open to new ideas or pleased that I had been asked to investigate this team. But he was, I knew from previous experience, fairly well-liked by both local people and international consultants.

After spending a few days with the two researchers, I felt certain that the project that would follow the survey could come to little good if the preliminary research was not taken out of the incompetent survey-taker's hands. In particular, he let his own academic biases cloud his interpretation of questions related to literacy. Naturally, all who were polled said literacy was a good thing, while some had little knowledge (and, hence, little enthusiasm) about fertilizer use or poultry-raising. But he mistakenly assumed that this meant that literacy was the villagers' foremost development priority. When I administered the same questionnaire to the same villagers, I found that almost all forms of income-generating activity held greater interest for the villagers than literacy did, even though those questioned valued literacy. Repeatedly, the linguist confused the villagers' approval of this and other items on the questionnaire with their desire to acquire them.

At the end of the ten days, my first suspicions were confirmed by evidence of the linguist's lack of research skills. I spelled out this evidence, along with the grounds for my belief that fluency in a language can be dangerous if not accompanied by "fluency" in the local culture and relevant professional skills, in a 20-page report that I submitted both to the official who hired me and to the international agency that had funded the project and selected the researchers. The agency, in turn, showed it to both the fieldworkers and the project supervisor.

In my report, I recommended that the agency take one of two courses. It should either replace the incompetent party (easy enough, since several highly trained researchers were available in the project area) or turn the entire project over to the more qualified researcher.

I heard about the outcome of this project quite by chance at an international

(Continued on page 15)

Development Communication Report

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TO AND FROM THE FIELD: COMMUNICATIONS & AGRICULTURE

How Information Flows To Small Nepalese Farms

In Nepal, where most people live on small subsistence farms, rural development is constrained by the divisive relationships between the rural poor and the rural rich and by those between urban and rural dwellers. The competition of needs — for food and fiber, mechanisms for marketing produce, effective governance, education, personal maintenance, and health care — also complicates the development process.

Critical to each of these factors is the flow of information. Information affects the technology of production; prices of such supplies as seed, feed, and fertilizers; the demands of local and distant markets; and other vital functions. More important, the willingness and ability of any group to change is directly related to the extent of information flow between that group and other groups.

This in mind, we at the Institute of Agriculture and Animal Science attempted to determine how information flows to 69 selected small farms in Nepal's Chitwan District, which contains the part of the Rapti Valley known as the Inner Terai. The particular farms were selected because they are near I.A.A.S. and because Institute students had already gathered interview data (related to farm operations and farm-family characteristics) on them.

(The three wards of Shardanagar Panchayat that were studied included no large farms, though a few farms in other wards of the Chitwan District are ten times the size of those surveyed. Seven persons and 6.45 large animals (buffalo, cattle, goats) lived on the average farm, which comprised 1.91 hectares. More than 85 percent of the farms grew at least three different cereal crops, and many had small kitchen gardens.)

Two patterns taken into account in this study are fairly common in the rural developing world. First, the major information channel seems to be word of mouth, and most information seems to come to small farms through visits from relatives, various officials, and commercial people.

Second, some farms in this area receive information from many different channels, and others are relatively cut off. Twenty of the 69 families were found to be receiving information on at least three of the four available communication channels: (1) radio, (2) letters, (3) membership in an organization, and (4) three or more official visits. Ten of these families received information through none of these channels, and 14 farms reported that only one of the channels was available to them.

Since the written word is sometimes a major source of agricultural information, each family was asked if any of its members could read. Only 7.2 percent of families had no literate members. Over 75 percent reported that a boy or man among their number could read, and 17.4 percent said that a girl in the household could. The largest farms had a significantly higher proportion of literate girls than the smaller farms did. Just over one-third of the farms reported receiving a newspaper, and only 14.5 percent said they received magazines. Twenty-six of the farmers stated that they tell others what they read.

With respect to farm size, the smallest farms and the largest farms reported getting more newspapers than the middle-size farms, perhaps because some of the farms under one bigha (0.67 hectares) in area may be owned by families that are also involved in retail shops and other non-farm activity. If these smallest farms are ignored and the other three sizes compared, there is significantly more newspaper reception on the very large farms (those over 4 bighas, or 2.71 hectares).

Radio receivers are owned by 33.8 percent of the farm families studied. These sets seemed to be evenly distributed among small, medium, and large farms, but families on very large farms owned a significantly larger number of receiving sets (27.9 percent). When asked for their preference among radio broadcasts heard, the farm families listed

(Continued on page 2)

An Overview of Communication in Agriculture Projects

If strategies of agricultural development sometimes seem muddled, perhaps it is partly because today's planners have wisely refrained from rejecting past models out of hand. Each model has been found wanting in one way or another, yet each has left something of value for subsequent programs.

Communication strategies are inescapably wedded to changes in farming practice. Small wonder, then, that recent spokesmen on the role of communication in agricultural development tend to talk softly: their own complex set of questions and variables must be reconciled with every change in the equally complex set they inherit from economists and sociologists.

A drift in communications thinking is identifiable, though. The rather narrow post-war focus on the transmission of messages from centralized or national sources has gradually given way to a more expansive emphasis upon a variety of kinds of communication among people at all levels and distances in a developing agricultural country. This shift, an inevitable product of change in the accepted strategies of agricultural development, can be traced through at least three distinct but related phases. Moreover, it appears to be entering a fourth phase, the implications of which merit a close look.

The Diffusion of Innovation Model

Applied to agricultural development, the Diffusion of Innovation Model reflected the rather simple observation that if *all* farmers could achieve yields as high as those of the *best* farmers, production would rise dramatically. It directed the communicator to focus attention on ways to persuade more farmers to adopt innovative agricultural practices and technologies.

Early research on the Diffusion Model concentrated on the series of stages

(Continued on page 2)

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Information Flows (Continued)

"Nepali News" as the most popular program, with 78.3 percent of listeners claiming to hear it regularly. Another 56.5 percent reported that they liked broadcasts of songs and music. Only 17.4 percent reported hearing the teachers' training program, and 8.7 percent said they listened to the children's broadcast. No listener reported having heard an agricultural broadcast.

Among 23 listeners, the most popular time of day for listening was from 2:30 to 3:00 p.m., when 87 percent had their radios on. Another large group listened from 3:00 p.m. to 4:00 p.m., and fewer than half as many listeners were tuned in between 1:00 p.m. and 2:30 p.m.

More than twice as many farms received information by letters via postal service as read newspapers or listened to the radio. Here, the very large farms reported the lowest numbers receiving letters, large farms next, and the medium farms (one to two bighas) received the most. Again, the farms of less than one bigha did not fit the pattern.

Visits by professionals to the farm were more frequent than any of the other information contacts reported. All but one farm in the study had been visited by a representative of the Sajha Cooperative, and 88.4 percent had been visited by the Pradhan Panch. School teachers had been to 71.1 percent of farms, and health department personnel had set foot on 60.9 percent of the farms studied. Of all the official visits reported, the least visitation was done by the Junior Technical Assistant from the Department of Agriculture; he had been on only two (2.9 percent) of the 69 farms. Although farmers were asked about visitors from the Irrigation Department, whose canals go through all wards studied, none had seen anyone from that department.

On the assumption that organization membership would facilitate the exchange of information, farmers were asked if they belonged to any organizations. Only 5.8 percent said they did.

When asked about personal contacts, 42 percent of this group reported that relatives visited often, 45 percent said that their relatives came sometimes, and 13 percent said relatives' visits were rare. The highest proportion of relatives' visits were experienced by families on the smallest farms.

A large proportion of the families reported that they visited the bazaars. While 56 percent indicated that one person from the farm went to the bazaar, 34 percent stated that two persons from the farm attended regularly, and 8.6 percent said that three persons from the farm did. On the smaller farms, more reported two persons going to the bazaar than reported one person attending. On the largest farms, the reverse holds true.

Among the most frequently used channels for information flow to the farm are commercial visitors. Just under 60 percent of the farm families stated that they were visited by salesmen or vendors, and an equal proportion reported visits from persons trying to buy things. In both cases, the smaller farms claimed more commercial visits than the larger farms.

The results of our study suggest that personal visits might well form the central core of any program designed to provide information to these farms. These data further imply that information flow might be significantly increased by increasing the number of radio receivers in rural areas, and by designing broadcasts specifically for these potential listeners.

The data further suggest that since officials from various organizations do visit the farms, they could be utilized as effective channels of information flow. They could dispense verbal information, posters, charts, and even printed matter. With most farms having at least one reader present, the benefits of distributing written information are potentially great.

Finally, information seems to flow through the bazaar and the local tea houses. Therefore, demonstrations near the roads leading to such places, as well as posters, charts, and public radios, are also promising channels for communication in places like the Chitwan District.

■ **George H. Axinn and T. Mallick, Institute of Agriculture and Animal Science, Rampur, Nepal**

Overview (Continued)

through which each individual presumably must pass in adopting new techniques (awareness, interest, evaluation, trial, and adoption or rejection). In addition, diffusionists tried to modify communication strategies to meet the needs of various types of farmers (innovators, early adopters, early majority, late majority, and laggards). Programs based upon the Diffusion Model stressed information on how to evaluate and apply innovations, as well as messages designed to make people more receptive to change.

The Diffusion Model had its day. But studies and observations throughout the 1960s began to reveal its oversimplifications. It offered no way to deal with circumstantial factors (particularly credit, market, and tenure considerations) that might bar a farmer from accepting certain innovations even while acknowledging their worth. It also failed to include any test of whether the technologies it promoted truly suited the needs of the users. And its almost exclusive focus on the "opinion leader" and the "early adopter" often left out those most in need.

In terms of communications and communication policy, the Diffusion Model also contributed to a warped view of the importance of the mass media and especially media of non-local origin and control. It limited the communication task to that of bringing into the community ideas and information from outside. Feedback was thought of only as a way to test the adequacy of a message and to modify it to make it more effective, not as a source of ideas for changing the agricultural development strategy itself. The enormous variance between regions, and even from farm to farm, got little attention. The model did nothing to mitigate the emphasis so many countries were placing on national media out of concern for nation-building and for the development of a national consensus.

The Package Programs Model

The Package Approach to agricultural development grew out of a rising awareness that information is not by itself a sufficient source of improvement in agricultural productivity and in the rural family's welfare. Arthur Mosher's stress on the situational differences among farmers and between regions was quickly endorsed by others. As early as 1965, Early Heady was pointing out that campaigns of persuasion are fruitless unless the farmer also has a "bundle" of other techniques and aids (including, for example, credit, markets, irrigation, and such inputs as improved seeds, fertilizers, and pesticides).

Package Programs quickly found application the world over, and these applications were soon modified and refined. India's Intensive Agricultural Districts Program (IAD) revealed, as did similar programs elsewhere, that commitment and cooperation at the highest levels among a whole range of governmental agencies is a prerequisite to success. The Puebla Project in Mexico showed the kind of special effort needed to devise a Package Program that would help the poorest farmers within the context of an overall effort to raise total food production. The Masagana 99 Project in the Philippines demonstrated the difficulty of integrating such diverse "package" components as the extensive use of radio, the creation of new credit and price-support programs, the formation of farmers' interest groups and an interagency coordinating authority, and the involvement of top-level political leadership.

Not yet adequately evaluated, the Package Program appears to be surrounded less by harsh criticism than by tough questions. In particular, some observers have questioned how well the experience with single-crop Package Programs can be applied to those programs that involve many crops and to factors other than production. Another challenge has been posed by the lack of any dependable formula for forcing various governmental departments to work together and to buttress each other's efforts.

For the communicator, the significance of the Package Programs was that they called attention to previously unmet needs for communication among agency representatives and stressed upward communication from the rural family to the agencies involved in agricultural develop-

ment. They also reflected the recognition that only the farmer himself can report whether seeds or fertilizers are available at the appropriate time and places and that market malfunctions must be communicated to those who can make changes.

While sound in some respects, the Package Programs Model did little to shift attention away from national or centralized media and messages. It helped encourage awareness that different farmers may need different informational inputs, but its practitioners still viewed messages primarily as coming into the community from outside. Justification of localization and of investment in local media was based on the presumed value of both in making externally originated messages more accessible, comprehensive, and persuasive. Lamentably, autonomous local communications found little or no place in the Package Programs Model.

The Induced Innovation Model

Both the Diffusion Model and the Package Programs Model assumed as their starting point a "given" body of available farm technology and a "given" set of rural institutions. Only slowly did the growing awareness of how these change lead to a search for the forces behind change and for ways to make technology and institutions more responsive.

Probably the most convincing analysis along these lines was put forth by Vern Ruttan and Yujiro Hayami in 1972. They contended that technical change and rural institutions are "guided along an efficient path by price signals in the market, provided that the prices efficiently reflect changes in the supply and demand of products and factors and that there exists effective interaction among farmers, public research institutions, and private agricultural supply firms."

Ruttan and Hayami recommended several specific improvements that relate to communications. Public sector investments could modernize the marketing system "through the establishment of the information and communication linkages necessary for the efficient functioning of the product and factor markets." Organizing farmers into politically effective local and regional farm "bureaus" or "farmers' associations" could produce a valuable "dialectic interaction among farmers and research scientists and administrators." Improvement of communication within the scientific community could bring the agricultural research facilities of developing countries more fully into "the main currents of scientific and technical innovation."

This analysis applies most aptly to a commercial agriculture in which development is described in terms of increased production and marketable surpluses of market commodities. But heavy reliance on the market mechanism and on profit motivations may not be enough where bettering the lot of subsistence farmers, landless laborers, and other low-income rural people is proposed as an important development goal. "Appropriate technology" proponents, humanists, and even some hard-boiled economists may continue to view with growing impatience an approach that offers so little to those outside or on the fringes of the market economy.

The Fourth Way

All three models have brought and continue to bring significant contributions to agricultural progress. Yet, a strategy limited to them will probably be inadequate to the challenge of the years ahead. What is beginning to arouse attention is a model that is increasingly decentralized and user-oriented, one that pays attention to the needs and preferences of rural families, as well as to national production goals.

Ronald Havelock has described a user-oriented model as having five essential points:

> "First, that user need is the paramount consideration and the only acceptable value-stance for the change agent; second, that diagnosis of need always has to be an integral part of the total process; third, that the outside change agent should be nondirective, rarely, if ever, violating the integrity of the user by placing himself in a directive or expert status; fourth, that the internal resources, i.e., those resources already existing and easily accessible within the client system itself, should be fully utilized; and fifth, that self-initiated and self-applied innovation will have the strongest user commitment and the best chances for long-term survival."

Such a concept would be hard to apply fully in agricultural development, since so many decisions about the allocation of human and other resources are based on national goals that, initially at least, are as likely to consider the preferences of the rural family an obstacle to be overcome as an end to be satisfied. At the very least, however, development is beginning to be seen as a process of problem-solving through which those who face the problems can articulate and communicate to the "experts" their needs for knowledge or research. In agriculture, this is coinciding with a rising awareness of the wide variations and the rapid and often unforeseeable changes in regional and individual farm situations. These variations and changes help explain why national (as opposed to local) planning has so often brought disappointing results for the agricultural sector.

Ten years ago, communicators simply asked how messages about improved farming practices could be made more persuasive and brought more fully to the attention of the people on the land. Today, important new questions have emerged:

1. What channels of communication are needed to bring together the contributions of diverse public and private agencies in meeting agricultural development needs?
2. What communication innovations are required to help rural people clarify their options, organize their resources, and make those outside the community aware of their needs?

One change is slowly but surely making itself felt — the erosion of the traditional view of economic planners that labor and management (and this means the whole working population in a rural area) are merely "factors" of production. Once we accept that the well-being of each individual and each unit has validity alongside national goals, new requirements arise. In particular, communication media and strategies must be aimed at insuring that decisions that relate to development are in the hands of the people they affect.

With declining acceptance of the notion that the only important messages for agricultural development flow from the top down (or the center outward), more energy and imagination must be devoted to the wider dispersion of communication skills, resources, and control. This needed dispersion is primarily geographical, but it should also be viewed as broadening the communication opportunities of people who until now have listened without speaking.

The creation of farmers' organizations designed to voice farmers' concerns, exert pressure on national governments, and dispense timely agricultural market information seems a logical first step toward participatory development. In addition, it also seems clear that rural people need better opportunities to get experience with the written and spoken word: opportunities to put in writing messages that will be read, opportunities to speak in public and to gain confidence in doing so. Rural community organizations can contribute greatly to all of these goals and to their vehicle, functional literacy.

There are stubborn obstacles to such local initiatives. One is that significant economies of scale are possible only when expensive communication technologies can be concentrated in a few hands. Another is the fact that autonomous local media tend to be less professional in form and style than the well-staffed, well-financed national network. A third problem is political: besides their potentially divisive effect as promoters of regionalism, dispersed and independent media are too seldom used to give voice to a variety of local views and too often used simply to reinforce entrenched local power.

The agricultural communication strategy of the future will undoubtedly be a hybrid strategy. It will continue to include national and regional mass media. It will continue to stress ways to make the messages conveyed through these media more understandable and more relevant. But it will certainly also be directed ever more at unlocking the energy and creativity latent in the rural community.

■ **Bryant E. Kearl, Department of Agricultural Journalism, University of Wisconsin**

They Listen If They Can: Reaching Bangladesh Villagers Via Radio

Desh Amar Mati Amar — "My country, my land" — is a broadcasting program aimed at stimulating the overall development of rural Bangladesh. The program reflects the hypothesis that radio is the most appropriate technology to reach the villagers, enlist their support, and strengthen their capabilities. The wide-ranging broadcasts focus on forestation efforts, the domestication of animals and birds, the development of fisheries, the development and welfare of rural youth and women, and population control and family planning.

Although Bangladesh has a total population of nearly seventy- two million, it has issued only half a million radio licenses. But an estimated two million radios are in use within the country, and at times as many as one hundred people band together around a single radio for community listening.

Visits to the villages, as well as a survey of listening habits in four representative sections of the nation, have yielded some useful findings about the potential of this medium for agricultural development. First, a few glimpses of radio in action as observed in the countryside . . .

Traveling in Bangladesh inevitably means coming across a tea shop containing a radio blaring the latest music or, perhaps, some folk drama. Turn a radio on while in a marketplace, such as the weekly rural bazaar, and a crowd forms immediately. People in Bangladesh obviously like listening to the radio.

At-home radio listeners scattered in 64,000 rural villages probably make up the largest audience. Invariably, the relatively better-off landowner owns the radio and controls its use, and many villages have no radios at all. Still, it is primarily through this medium that information about agriculture is normally transmitted — sometimes a course in fish cultivation, other times some information about fertilizer.

Bangladesh has both land resources and the human resources needed to develop that land. What it desperately lacks is the material inputs and the knowledge at the village level to utilize them. Of the two shortages, that of technical inputs is often greatest. Fertilizer capable of boosting a rice crop may be mentioned over the radio when it is not available to the villager. Coordination is lacking and follow-up is minimal.

Visiting a rural village twenty miles from Khulna, a major port city in the south of the country, one of us was struck by how quickly radio was able to transmit information, not only from the capital of Dacca, but from 12,000 miles away. Just a few hours after the results of the American presidential election were known, a young animal-husbandry official chatting in a small candlelit room was able to announce that Jimmy Carter had been elected. His news source was a transistorized and battery-operated radio.

In one village near Rangpur, farmers were able to make better use of their land through local initiatives made possible by information supplied by radio. Their yields of rice per acre nearly doubled through use of fertilizers and high-yield seeds first heard about on radio.

To obtain more systematic data on how radio broadcasts affect villagers, Radio Bangladesh has conducted a four-region survey of listening habits.* UNICEF collaborated on the survey as part of its efforts to help increase Bangladesh's capacity to deliver basic services and produce agricultural inputs.

Radio was the medium of choice for the familiar general reasons — reach, economy, accessibility — and a few specific ones: watching motion pictures, for instance, is still considered a sin in rural Bangladesh except for the young generation, and TV viewing is catching on only slowly in the countryside.

The results of the personal interview survey were not conclusive, but they did point to the potential means of upgrading and extending radio use, and some findings illuminated problems endemic to radio use in severely underdeveloped countries.

First of all, the prohibitive costs of a receiver and radio batteries were revealed. Of the majority of the respondents who were farmers or day laborers, only 8.76 percent owned sets. Not surprisingly, land ownership, plus educational level, were the chief determinants of radio ownership.

Second, most radio owners stated that they feel "economic pressure" when they purchase batteries at the high rate. Moreover, there is an inverse relation between the cost of the battery and the amount of time the set is turned on, suggesting that increasing the supply of receivers and subsidizing their use may be desirable. The small number of respondents belonging to the higher income groups possessed 45.83 percent of all radio sets in Bangladesh.

In sum, very few rural people own radios, but community listening, usually in the house of a neighbor, is widespread. Most of the respondents who do not have their own radios listen in the village market, shops, or in a neighbor's house — indicating that if the villagers were provided with radios, they would listen more. Two-thirds of the respondents listen to the programs, with the most popular shows being news, news commentaries, and *Desh Amar Mati Amar*. Also popular are music, songs, and religious programs.

The respondents confirmed the investigators' hypothesis that radio is the most effective means of communication in rural Bangladesh. When asked to suggest improvements in the *Desh Amar Mati Amar* programs, most respondents merely advocated the prolongation of the programs. They also suggested further increasing the focus on increased food production, proposed a new program "item" for landless laborers, and requested more songs on crop production and more discussions on common human diseases.

On the basis of the data, the investigators reached some conclusions that development communication specialists in other countries may find worth pondering. They found that the farmers are genuinely interested in learning about food production, animal husbandry, and land use, and that a significant number of people want the programs lengthened. Less encouraging is the fact that two-thirds of all rural people are not receiving the agricultural message, either because they have no radios or they cannot maintain them.

Obviously, making radios cheaper to buy and maintain is Bangladesh's main communication problem. Getting people to listen is just as obviously not. ■

Moncef Bouhafa was information officer for UNICEF in Dacca, Bangladesh, for three years, before joining UNICEF headquarters in New York City. **Ronald Gross**, co-author of the recent volume *Communications Technologies in Higher Education*, has just returned from Bangladesh.

"Radio Use in Rural Bangladesh: An Evaluative Study on Effectiveness of Radio as a Means of Communication," compiled and edited by Sufia Khanam, Radio Bangladesh, 1976-1977. (For a copy of the report, write to UNICEF, GPO Box 58, Dacca, Bangladesh.)

Fulbright-Hays Awards in Communications

The Council for International Exchange of Scholars (CIES), Eleven Dupont Circle, N.W., Washington, D.C. 20036, is now accepting applications from U.S. citizens for the following Fulbright openings:

1. *Film and Television Institute, Poona, India:* a film-production consultant with technical experience in production of 16mm films for educational television. Ph.D.s in communications or educational television preferred. Starting June/July 1978.
2. *University of Brasilia, Brazil:* Lecturers in one or more of the following at undergraduate and graduate levels: communication theory and research; psychology of social communications; communication technology and social and cultural change; communications in formal organizations; communication media and nonformal education; communications and development. February-December 1979. Portuguese needed.

The senior Fulbright-Hays program also provides opportunities for scholars from abroad to lecture or conduct post-doctoral research in the United States.

Participatory Communication in International Agricultural Research Centers

The current trend in agricultural communication in developing countries is toward emphasizing the message and the social dynamics of its transmission. Advanced technology in communication media, important as it may be, is receiving commensurately less attention. The strongest voices warn that the medium is not the message in agricultural development, that farmers need information about new technology, and that extension and communication networks do little good if the messages extended and communicated are not relevant. In other words, we have been urged to look first for factual, scientific, and problem-oriented messages, and then for technology and media to transfer them. We are being told, in effect, that the problems of agricultural development stem from the absence of adequate scientific knowledge in a form that farmers can use.

An historical irony underlies this communication problem and helps explain the aforementioned trend. Plant breeding and scientific agricultural experimentation have been carried out chiefly in the temperate zones in which the industrial countries lie, but most of the plants on which humankind now depends for food seem to have originated in the tropical and the sub-tropical belts that today include the less developed countries.

Since the systems of cultivating food crops in many of these poorer countries have remained largely unimproved, current agricultural development policies emphasize agricultural research aimed at coming up with better plant varieties and improved methods of cultivation. This approach requires the development of a special communication strategy capable of linking research personnel in the developing countries with both farmers in their countries and the international agricultural research centers. Indeed, the communication function of the newly established network of international agricultural research centers is unique and challenging. Established under the supervision of the Consultative Group on International Agricultural Research (CGIAR), these centers reflect the assumption that major increases in agricultural development and food production will be achieved through improving agricultural research in developing countries. Charged with developing improved varieties, efficient farming systems, and better agricultural practices, they are also expected to establish a viable international communication network capable of transferring the newly developed technology to the national research and production institutions in the developing countries.

The communication function of the International Center for Agricultural Research in the Dry Areas (ICARDA), for example, is critical in the early stage of formulating the research program. Scientists attempt to learn at this point from their colleagues in the countries of the region about the main issues and problems hampering the development and improvement of local food crops. For instance, national research institutions in ICARDA's region have expressed concern about the need to find solutions to the problems of excessive losses in lentils and chickpeas caused by labor shortages during harvest time. This problem requires either the development of tall and erect varieties suitable for mechanized harvesting or the adaptation of harvesting machines to accommodate the characteristics of existing varieties. ICARDA scientists are working on both alternatives. It takes time to find the solution, but herein resides the communication challenge and task: The process involves creative interaction between ICARDA research workers and the scientists of the national programs in the region before the technology is presented to the farmers for testing and adaptation. Contacts with the national research scientists are maintained through systematic visits and information exchange, and new varieties are thus being co-developed by the national and international institutions.

Equally important, participation of all concerned is ensured, but separating lines between national and international efforts are not drawn. The new product is accepted by the national scientists because their own efforts are reflected in its development. This acceptance is the main step in crossing national borders with technology that makes a difference where it counts — in farmers' fields.

(Part II of this article will cover the complementary communication process being established to move newly developed technology from the national research institutions to the farmers' fields.)

■ **Sawki Barghouti, Head of Communication and Training, ICARDA, Aleppo, Syria**

On File at ERIC

Recent entries in the ERIC (Educational Resources Information Center) file include two discussions of rural development with an emphasis on agriculture.

- Bowman, M.J. *Rural People and Rural Economic Development. IIEP Seminar Paper: 21.* Paris: UNESCO, 1975, 120 p. (ED 135 533).

  This paper discusses development as a process involving the generation, diffusion, and realization of new opportunities. The following topics are discussed: (1) the development process, including such issues as visible unemployment, rural to urban migration, the dualism of labor markets, population growth, and the disequilibrium of economic life in the development stage; (2) the adaptive and innovative attributes of human beings; (3) an economic analysis of people-changing processes, skill mobility, and the markets for "jobs" and "work;" (4) progressive agriculture, including its relationship to efficient information systems; (5) the rural non-farm economy, including education, communication, and innovation in the non-farm enterprise; (6) strategies for enlarging opportunities, including a focus on the interdependencies of education and development and on economic incentives and agricultural progress. Available from International Institute for Educational Planning, 7-9 Rue Eugene Delacroix, 75016 Paris, France. ($.60). Also available from EDRS in microfiche only for $.83 plus postage.

- Medlin, W.K. *Problems in Planning Rural Education for Agricultural and Nutrition Development: A Review of Relevant Findings from Communications Research. IIEP Seminar Paper: 16.* Paris: UNESCO, 1975, 56 p. (ED 135 529).

  Rural education research and field experience related to the communication of relevant knowledge to disadvantaged rural populations in the developing nations are examined. Findings indicate that decisions on knowledge dissemination are usually strongly influenced by groups with social and/or political weight; that clients tend to learn most effectively when engaged in decision-making related to their needs; and that curricular and instructional development are most successful when actual and potential utilization of knowledge by clients, as well as the appropriateness of instructional theories to a given rural setting, are taken into account. Available from International Institute for Educational Planning, 7-9 Rue Eugene Delacroix, 75016 Paris, France ($.60). Also available from EDRS in microfiche only for $.83 plus postage.

Documents available from EDRS can be ordered from ERIC Document Reproduction Center, P.O. Box 190, Arlington, VA 22210. Order by ED number and enclose payment for the price plus postage. For information about ERIC, indexes to ERIC documents, and other services, write ERIC Clearinghouse on Information Resources, School of Education, Syracuse University, Syracuse, New York 13210.

■ **Barbara B. Minor, Publications Coordinator, ERIC Clearinghouse on Information Resources**

THE BASIC VILLAGE EDUCATION PROJECT

A Day in Momostenango

An affable blanket-seller who thought the empty backseat of my compact car reasonable grounds for a quick introduction was the first of many Guatemalans to help me form a firsthand impression of the impact of Basic Village Education. After giving him a moment to arrange his bale of wares and then plying him with questions about the market he had attended in San Francisco el Alto the day before, I sued for the information I really wanted. Did he listen to Radio Momostenango? He did, regularly.

Radio Momostenango has been broadcasting agricultural information and advice, public service announcements, and indigenous music and drama to the villagers of Momostenango eight hours a day six days a week since 1976. The second of two stations established jointly by the Academy for Educational Development on contract to A.I.D. and by the Guatemalan Government as part of the five-year experiment in agricultural communications known as the Basic Village Education Project, the station broadcasts to a potential audience of 900,000 listeners in split shifts and two languages, Quiché and Spanish.

I didn't have to ask the next villager I spoke to whether he listened to Radio Momostenango. He works there, logging in the letters the station receives from its listeners. Ricardo was busy with the day's mail when I arrived, but he put aside his work long enough to acquaint me with the broadcast equipment, introduce the Spanish-speaking "disc jockey" Cesar, and locate the station manager.

The number of employees and the level of sophistication of the equipment at Radio Momostenango are deliberately kept low so that the Guatemalan Government will be able to maintain both when outside support is withdrawn at the close of the experimental phase in early 1978. The station itself consists of three small rooms with an entrance in common. The station's broadcast equipment cost only $25,000. The staff is composed of three full-time and two part-time employees; a Spanish-speaking broadcaster and a Quiché-speaking broadcaster, each of whom is on the air for a few hours a day; a project secretary, who handles the station's paperwork and helps maintain the equipment; the station manager, who oversees all operations, contributes to program development, and doubles as an announcer; and a watchman.

The station manager, another unabashedly partisan informant, represented my third yes vote. Mario Mendizabal didn't give me much time to reflect on how my informal poll was going, however. Within 20 minutes of my arrival, he had ushered me out of the hilltop station and into the village — a neat analogy, I later thought, for the way BVE works.

The BVE experiment includes four communication treatments, each of which is used in a different area and matched with a control. The first is radio alone. The second is radio combined with personal contacts made by a BVE-trained monitor. The third makes coordinated use of radio, a monitor, and an agronomist. The fourth, added when the project was modified in 1975, relies upon the unaided efforts of a monitor working in an area unreached by the BVE radio signal.

Mario's idea was to let me see for myself, and the first thing I saw was what

appeared to be a ceremony in progress on the far side of the hill. In the shadow of the radio tower and within earshot of a program on modern agricultural practices, a dozen older villagers were burning the previous year's broken pottery and the prize specimens of the last maize crop. It was the thirteenth day of the Mayan calendar, the time to make offerings for the dead and for the coming harvest.

BVE's target audience in several respects typifies peasant farmers throughout the Third World. The average farmer reached by BVE has little or no in-school education, works at most a few acres of relatively unproductive land, lives some distance from an industrial and financial center, and out of necessity derives some income from nonagricultural activities.

Almost mincing steps as the mid-morning heat began to take its toll, we negotiated several steep slopes (the perpetual traverse of which must make the Indian villagers lion-hearted) to get to the edge of town. After pausing to inspect the local geophysical attraction, wind-lashed limestone spires twice the height of neighboring pines, we set foot on one farmer's field and laid eyes on many. A few stalk-strewn patches looked planed, but most have been contoured to thwart erosion — as recommended on Radio Momostenango.

Five Years in Guatemala

The Basic Village Education Project in Guatemala has investigated the effectiveness of various combinations of mass media and interpersonal approaches in reaching the small farmer. Some of the findings identified after five years of study seem to have major implications for other projects utilizing radio as a medium in agricultural development. Presenting these findings along with some of the background assumptions, capsulizing the educational philosophy behind BVE, and touching upon the research methods used may set the stage for discussion.

Major Findings

Major findings at this point suggest first of all that a high level of radio listenership can be achieved — even in a subsistence farm population. During the first year of the BVE Project, over 90 percent of the respondents in the Eastern project area reported listening to "Radio Quezada."

Second, "educational" radio programming can develop a strong following. During the first years of the project, 35 percent of radio listeners reported a preference for educational programs over other program types, and preference for such programs has continued to increase over the life of the project. In the final experimental year, 1976, over 50 percent of all radio listeners polled preferred educational programming. Most of the shift reflected the erosion of a long-standing preference for popular music programs.

Third, the amount of time spent listening to radio programs may increase as the result of a project such as BVE. In BVE's first year, only 5 percent of the farmers reported listening to the radio all day. In the final year, the percentage had increased to 15 percent — probably an indication that more farmers were listening to transistor radios in the field while they worked.

Fourth, educational radio programming can increase listeners' useful knowledge of agriculture significantly. During the first year of programming, 63 percent of the respondents reported that they obtained agricultural information from the radio, and this proportion increased over the project's duration. During the final experimental year, 73 percent reported using radio as a source of agricultural information.

Even when respondents were asked to choose between several sources of information on a particular agricultural practice, radio remained an important source. During the first year of BVE, 52 percent of those reporting new information about fertilizer use reported that radio was their main source of such information. Similar percentages were established for later experimental years.

Fifth, educational radio programming can affect agricultural practice positively. Individuals receiving the BVE educational programming changed many of their agricultural practices over a two-year period, a 65-item survey showed. (So did farmers in the control areas, but change among

The agricultural messages broadcast over Radio Momostenango and its sister station in Eastern Guatemala, Radio Quezada, are developed by agronomists and the production staff at the project's headquarters and production studios in Guatemala City. The primary source of technical information is the Ministry of Agriculture, which also reviews and approves each theme used. Farmers, agricultural research institutes, and agencies that supply goods and services to farmers also spot problems and provide data.

The next leg of the hike ended at the open gate of one of Momostenango's blanket "factories," an open-air courtyard surrounded by four occupied work stations set up under elongated eaves. A polite woman of sixty emerged from recesses that seemed to be permanent living quarters and, on behalf of the weavers, asked Mario why we had come. He mentioned the radio station, she nodded, and the talk turned to some of the finer points of foot-loomed wraps.

Villages were singled out for inclusion in the BVE project on the basis of their representativeness of subsistence economies. Socio-economic factors, farm size, rainfall patterns, population distribution, agricultural practices, and land productivity were assessed prior to site selection, as was government census information.

From the weaver's cooperative, we headed in the direction of a rocky butte that affords an eagle's view of the town and the land. On the way we wended through a thinly settled area in which the sounds of daily chores mingled in several yards and gardens with those of Radio Momostenango. At the moment, the fare was music.

To attract a large and loyal listening audience, BVE's programmers devote roughly 80 percent of all broadcast time to non-agricultural programs: music, children's shows, local news, message exchanges, comic drama, and family entertainment. The core agricultural program consists of agricultural "magazines," radio novels enriched with information on crops and farming techniques, question-and-answer sessions with agronomists, and single-message spots.

The panoramic view duly noted and appreciated, the object became a visit to the community hot springs. As we drew closer, more and more of the people who stopped to exchange pleasantries with Mario looked fresh-scrubbed. Two or three small boys we met on the way alluded to something "Don Mario" had said in a recent boys' hour broadcast.

Besides determining the impact of radio used alone and in combination with other channels of communication, the BVE evaluation team will draw cross-cultural comparisons based on the differences between project results in the Oriente *region and the findings in the* Occidente *region. The team's report is scheduled for completion in mid-1978.*

The rugged downhill trail to the springs appeared intended for the sure of foot only. Yet, a sizable share of the local women and children and some of the village men were scouring newly made blankets on the rocks, bathing, and washing clothes. A few were actually steeping tea in metal kettles placed strategically in shallow boiling springs. This was obviously not a tourist spot, but Mario's presence seemed to soothe the suspicious.

BVE's future will be determined by the Guatemalan government, which has assumed sole support of the BVE operation in the Oriente *since the project's experimental phase closed there in December 1976. With the reorganization of the Ministry of Education in 1977, proposals to broaden BVE programs to include rural family education and literacy training, to increase the number of field monitors, and to construct additional production and recording studios have been advanced.*

Winded and relaxed, we spent the remaining time before Mario's afternoon broadcast discussing what we had seen. I confessed that the tour couldn't have been more telling or effective if it had been staged. His laugh let me know both that it wasn't and that his rapport with the villagers is such that he probably could have pulled off such a maneuver had he wanted to. ■ **K.C.**

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this group was considerably less marked.)

Of those respondents who reported changing their agricultural practices during the first year of BVE programming, 42 percent identified radio as the primary motivator of such change. Radio was also identified as an important source of change during the second programming year (when 32 percent of the changers were influenced primarily by radio), although radio's importance appeared to diminish slightly as that of word of mouth grew. Such results probably indicate that radio has the most profound impact on "earlier changers" while "later changers" are more influenced by the diffusion of information through friends and neighbors.

BVE Programming

Specific elements of BVE programming that presumably relate to its positive impact number at least five.

1. *Needs assessment.* Since the programs were aimed mainly at improving agricultural practice, extensive assessment was made in the field of existing levels of practice so that programming could be geared to realistic development goals. Characteristics of the audience were also studied and taken into account in program planning. Such characteristics included levels of literacy, orientation toward risk-taking, economic factors, general farming practices, and related factors of mobility, health, and nutrition.

2. *Targeted information.* Each message system had very specifically tailored information to which the farmer was in a position to respond. In addition, program messages were repeated at different periods of the day and times of the month so that farmers had several opportunities to be exposed to each particular piece of information. Moreover, programs were geared as closely as possible to the agricultural year so that messages were timely and seasonal.

3. *Localized and personalized messages.* The radio station was located in the environs it served — a factor that may have been more important than first thought. The radio thus provided not only a localized, but also a highly personalized, communication system. The general acceptance of this "personalized" radio is borne out by the many letters and requests received by the station.

4. *Evaluation feedback link.* The programming system included a time-sampling procedure, a limited field evaluation conducted monthly from a random sample so programmers could get immediate feedback on the acceptability and usefulness of material in the program.

5. *Program feedback link.* In addition to evaluation feedback, the BVE programming system included various mechanisms for obtaining from the field feedback that could be used to make program content more relevant to farmers' needs. Field agronomists and field monitors were two such "mechanisms."

The key characteristics of a radio program that is accepted by a peasant target population appear to relate to the extent to which (1) recommendations fit the population's specific needs; (2) messages are scheduled and repeated at appropriate times; (3) field-evaluation feedback is used in programming; (4) agronomists and/or monitors contribute directly to programming content; and (5) radio broadcasts and operations are localized.

It is also clear that while appropriate radio programming can lead directly to both gains in knowledge and changes in behavior, such programmed messages may reach beyond the target audience via friends and neighbors. Radio and these more traditional sources of agricultural information thus interact with and reinforce each other.

■ **Edgar G. Nesman, Thomas A. Rich, and Sara G. Rivers, BVE Evaluation Project, University of South Florida**

AN INTERVIEW WITH DANIEL BENOR

An Israeli agronomist and extension-service expert, Daniel Benor has spent more than 20 years setting up agricultural extension services that now affect some 50 million farm families in some of the world's poorest countries. His approach to extension is described at length in a recent World Bank monograph, "Agricultural Extension: The Training and Visit System," which he wrote with James Q. Harrison.

On February 8, 1978, Benor met with the staffs of the Clearinghouse and the Academy for Educational Development, of which the Clearinghouse is part. Relishing the role of devil's advocate in a roomful of the media-minded, Benor put forth his belief that the mass media are best used in agricultural development to interest and motivate farmers rather than to transfer basic information and skills.

Watchful readers are invited to write the editor in response to the following transcription of Benor's provocative remarks.

Staff: How did you get involved in agricultural extension work?

Benor: I was a cotton and wheat farmer myself for many years before I studied extension principles. One thing led to another.

Staff: How did your technique evolve?

Benor: Cotton and wheat happened to be the main crops in the Seyhan project area in Turkey where I started out. It was easy to convince those farmers that I knew what I was talking about, and once the farmers trusted me, I had no trouble commanding an audience. The farmers listened. Now I don't believe that farmers won't listen, only that they won't listen to people with nothing useful and timely to say.

Incidentally, it's no fun to work in the Seyhan project anymore. The cotton and wheat grown there scratch the ceiling all the time. It's impossible to get higher yields than Turkish farmers get there. When we started, no farmer got 2.5 tons of wheat per hectare. After four years, the same remained true. But all of them used to get less than that amount and now every single one gets more.

Staff: You scarcely refer in your monograph to the use of media in your style of agricultural extension work. Why? Because you stress a face-to-face approach?

Benor: First of all, our method is not face-to-face. I don't think much of extension services that try to reach each farmer face-to-face. An extension service should be able to deliver vital messages to all of the farmers without making personal contact with all of them. We use "contact farmers" to deliver the messages to the entire farm population. And by contact farmers, I don't mean the biggest or richest farmers, but ordinary farmers who have earned their neighbors' trust and respect. If you reach 10 percent of the farmers, the others will be reached, either through seeing innovations in the field or hearing about them.

Staff: How are the contact farmers selected?

Benor: By the community and the extension agents together. But the farmers are not in government employ. Once you pay the extension agent, other farmers will consider him special, an agent of the government. So contact farmers get nothing but know-how for their trouble. We are not in the business of trading goods or seeds for work. The main qualification is that the contact farmer is accepted by the society. He is not someone with extra privileges.

Staff: How do you select the people who train the contact farmers?

Benor: Have you ever seen a bank without money or a supermarket without stock on its shelves? The only thing we sell is know-how, so we pay a lot of attention to training the extension agents. Having a strong, single line of command is essential to our success. The ratio of extension agents to extension officers is about one to six or eight, and that ratio is the same at every level of the service. The agents are trained by the officers once a fortnight at the same time and the same place each session.

Staff: In your monograph, you say that restricting the size of a project area is preferable to "diluting" the power of the agricultural extension service, and you suggest that an agent-client ratio within the range of one to 500 and one to 800 is best for most kinds of agriculture. Have you ever considered using media to extend the area of a project's impact to include a second tier of clients?

Benor: I can offer no scientific explanation of how I arrived at that agent-client ratio. Experience was my teacher. Of course, messages cost more to deliver as the ratio shrinks. But we never use media *instead* of the extension agent. Media are treated not as labor-substitutes but as complements. Radio, for example, cannot teach farmers to use elevated nurseries in paddy production. What it can do is raise the interest of the farmers in this technique. It can also provide simple instructions and recommendations to the farmer who has had some contact with an agent.

I am delighted to involve available media and media specialists in the effort, but I don't think that even TV can train farmers in field practices. Farmers need people to demonstrate and to check their progress and to help them take into account the special characteristics of their own plots of land. TV cannot be specific enough. I appreciate the media, but I regard them as helpers.

Staff: You contend, then, that mass media are relatively unimportant — deserving, say, only 5 percent of a project's budget?

Benor: I can't give you a precise figure. In extremely underdeveloped countries, the media can be used to attract farmers to programs and make them aware of their options. But in such countries, highly specific and centrally developed messages sent out in lieu of extension agents don't work. The same tack works among the most highly agriculturally developed countries. There, people heed good ideas that reach them via the media and have the means to try those ideas out. For countries between the extremes, other strategies have to be used.

Staff: How do you identify where, when, and how to use the media to supplement agent contacts, especially where no extension service exists?

Benor: I have no specific recipes, but I do know that the media will have little impact unless their use is combined with an extension service. Farmers may listen, but they won't follow, and that makes all the difference. With extension agents in the field, advice spread via the media can be effective. I myself broadcast five minutes of highly technical information over radio to farmers every morning for years.

Staff: How are you conveying information through all levels of the agricultural extension service and insuring that the information the farmers get is appropriate and timely?

Benor: This is where the media can be helpful. When we have a message by a top Subject Matter Specialist, or SMS, no more than two weeks ever goes by without the opportunity to deliver that message. Five thousand extension agents in West Bengal, for example, can get any message to the target audience in two, never more than three, weeks. Each group of 50 to 60 extension agents is overseen by an SMS. SMSs pervade several levels of the system, and these mid-level SMSs are not mere postmen; they interpret the message in light of local needs and make the necessary adjustments before making carefully-tailored recommendations.

Staff: Is this entire process oral? If so, how do you know that the message remains intact and consistent across all these transfers?

Benor: The training program for extension agents is different in each state because conditions differ. Messages do change, but that change reflects a local reality. Training sessions consist of lectures, discussion, and two- or three-hour sessions in the fields. That way, the agents know what they are talking about and rote memory becomes relatively less important. Agents also receive printed hand-outs to refer to later.

Staff: Does the farmer get such hand-outs?

Benor: No, the rural majorities are illiterate in many of our project areas. What the farmer gets is a verbal explanation that he can understand. He is also exposed to illustrated posters. Farmers have remarkable memories for useful information because constant practice reinforces their knowledge. Some illiterate farmers amaze me with their ability to rattle off the scientific names of plants and plant diseases.

Staff: Can what you are doing be done in areas where there are not enough extension agents?

Benor: I have never been to a place where there are not enough extension agents. Extension agents don't have to have high school diplomas and two or more years of training in agricultural science and extension principles.

In Nepal, for example, where there are not enough high school graduates to serve as such agents, we selected the better farmers, hired them on a contract basis, and trained them to do extension work. With the back-stopping of the SMSs and the research people, they do a fine job. The only place where an extension service cannot be started is where all farmers get the same yields and use the best existing techniques to get them. A shortage of good people to work in the service is never the problem.

Staff: How do you make sure that your Subject Matter Specialists are getting accurate information about local conditions and that they prepare the right messages?

Benor: Subject Matter Specialists spend one-third of their time doing adaptive research, one-third in the farmers' fields, and one-third training the extension agents. They have plenty of opportunities to see the impact of what they are doing and to confront the farmers' problems firsthand. In short, the Subject Matter Specialists know the facts of life. The best indicators of the appropriateness of the messages are increased production and income and the fact that the inputs the agents recommend go out of stock so rapidly.

Staff: You are describing a picture in which the agents have the answers to the farmers' problems, a situation in which what you call "know-how" is all that's needed to make things work. But aren't agricultural conditions in some parts of the world so deteriorated that even the experts are stumped?

Benor: Yes. The extension service can't work miracles. It can't make rain. It can't turn back floodtides. Farmers understand that. In Sri Lanka, for example, we started a project in the midst of a drought that lasted for years. The attitude of the farmers there was sane. "The yields are terrible," they said, "but the little we get is thanks to the extension agent's help." Success is relative, so all we can do is to make the best use of existing resources.

Staff: It's easy to go along with you when you say that learning agriculture from an extension agent beats learning agriculture from a radio or TV presence. But doesn't training agents, giving them on-the-spot refresher training every two weeks, and providing them with vehicles cost a small fortune?

Benor: We figure that in Indonesia the whole exercise can be paid for completely if the farmer can increase his yields of only one of his crops, paddy, the equivalent of 12 kg. per hectare. Yet, Indonesian farmers often realize half-ton gains per hectare. With our approach, the amount of government money spent on each farm family is well below that spent in any country. Cost is scarcely a consideration. No country in the world can afford *not* to spend this money.

Staff: How do you know that agents' reports reflect what is actually happening?

Benor: It's simple, really. We don't rely on written reports at all. People *at every level of the system* pay unannounced, even spur-of-the-moment, visits to the farmers' fields. The fields are the final test. What's more, if the extension agent isn't doing a good job, his supervisor is held responsible. The incentive to spot-check often and carefully is obviously great in a system like this, and that incentive works.

Staff: When a project works less than successfully, what usually goes wrong?

Benor: There are no failures as far as I am concerned. But there are political problems. In particular, transferring agents from the aegis of one agency to another in order to establish a single line of command causes problems. But it can be done. People at the top have a stake in making agencies more effective; they just have to be convinced of the enormous potential for positive change that attaches to the risk they take.

Staff: But what do you do when existing agricultural extension services and government bureaucracies resist your methods?

Benor: I've heard the kind of stories that your question implies you have heard. Their main thread is "this will never work." Naive as it may sound, though, things "destined" to fail often do work if it is kept uppermost in the minds of those involved that satisfaction in one's work is a universal goal — for the extension worker and the government bureaucrat, as well as for the farmer.

Enthusiasm and personal effectiveness form the same kind of self-perpetuating cycle that dispiritedness and personal ineffectiveness do. The excitement of the well-trained, and so well-received, agricultural extension worker is wonderful to see, and it lasts.

Staff: Would you say, then, that the essence of your approach is organizational change?

Benor: Yes. Teaching and training are vital, but quite a few people know how to teach and train. If I stress the importance of organizational change, it is because that is ultimately more difficult and is a prerequisite to whatever else happens.

Having the right message is also vital, and not just for extension agents. I have the "right message" when I approach high-level ministers and government supervisors.

Staff: In your booklet, you say that a main problem with existing agricultural extension services is that the agents are overburdened and expected to carry messages on too many subjects. In your view, would eliminating that problem require setting up separate services for each sector?

Benor: No. One extension service is enough. Most development problems relate somehow to farming and income-generating activities, and when explicitly agricultural messages are not pressing, extension agents can tell the farmer about the nutritional value of local crops and can relate increased agricultural productivity to decreased needs for large families. But the agricultural message takes priority, and extension agents should not be burdened with jobs like dispensing pills or keeping the farmers' credit records. Such time-consuming activities deflect the agents' energies and weaken the program.

Staff: Any final words?

Benor: Yes. To me, organizational structure is the key to what I am doing. But I regard my work as primarily a communication service, so in one sense we share a deep interest.

"Agricultural Extension: The Training and Visit System" can be obtained from the World Bank, 1818 H Street, N.W., Washington, D.C. 20433, U.S.A.

Rural Education and Agricultural Development — On and Off The Official Record

Agricultural development projects do not operate in virgin territory. Their success is conditioned primarily by the receptivity and adaptability of the rural people. Rural education is thus its cornerstone.

> "In large areas of the world production per man is low — so low that many families barely glean enough calories from their meager crops to keep them alive . . . The critical need for better and more widespread efforts in agricultural education and extension must be recognized . . . (vital are the) adoption of approved extension methods; . . . adequate training of personnel needed in carrying into action the agricultural programs . . .; general and vocational education among farm people . . ."

Such were the very first findings adopted in Quebec City by the First Session of the Food and Agriculture Organization of the United Nations. The time: October 1945.

Thirty-two years later the Joint FAO/ILO/UNESCO Advisory Committee on Agricultural Education (the JAC), meeting in Geneva for its fourth session, reported as follows:

> "Member States need to give priority to the training of agricultural personnel in their development plans . . . efforts should be made to give attention to organized participation of rural people in the planning and implementation of rural development programs, including training programs . . . (There is) need for a much more dynamic approach to agricultural education and training than is presently the case."

In layman's English, this diplomatic language means that 17 specialists from all continents meeting in the spring of 1977 found training of agricultural personnel throughout the developing world on the lower rungs of governments' priority scales and the participation of rural people in their own education grossly inadequate.

The preamble of the 1977 JAC report could thus have been taken word per word from the Quebec report: "millions of families barely glean enough calories from their meager crops to keep them alive." In fact, their number has increased in the intervening three decades.

During these 30 years the pace of change was hectic; rates of economic growth increased spectacularly, the volume of world trade increased even faster; political independence swept two continents; international agencies grew in number and in stature; technological progress proceeded at an undreamed of pace, especially in the fields of genetics and agronomy; and major intergovernmental world conferences on Population, Environment, and Food were held. Yet, increasing numbers of rural poor have been left behind.

Besides the devious obstacles to harmonious rural development identifiable in the socio-economic structures of developing countries and in the prevailing international economic order, should not some assumptions implicit in agricultural development projects be indicted? The problem is not new and was so topical ten years ago that the directors general of the three international agencies primarily responsible for its solution convened a World Conference on Agricultural Education and Training in Copenhagen in July 1970. There, the communication gap was scrutinized. The major finding was that development policies and projects were all too often conceived and operated without regard for the necessary involvement of the very people they were intended to promote. Similarly, curricula in education at all levels were conceived from an academic standpoint and seldom reflected the basis and felt needs of the recipients. True for genuine national programs, these criticisms were even more relevant when international cooperation was concerned. The single most glaring failure was the practical absence of teaching and training materials in the languages of the peasants.

While no new global assessment of the progress in rural education has been undertaken since 1970, world education's qualitative improvement does seem somewhat more satisfactory than its quantitative growth. Sociologists have made a valuable contribution, and the presumptuousness of the international expert has abated noticeably.

In the field of concepts, international developments were influenced by some major events: the UNESCO report on "Learning to Be" (1972), the World Food Conference (1974), and the reorientation of the World Bank's program toward giving better service to the poorest of the poor. In all these activities, education and communication were treated as basic components of an integrated rural development strategy. At the same time, the concept of education was broadened and formal schooling lost part of its artificial supremacy to become a phase of life-long education. Exploring the consequences of these conceptual changes, the JAC in its 1973 report stressed that "education must correct the handicaps due to being born into an economically and culturally deprived environment" and that "absolute priority must be given to education geared to the economic and social development of rural areas seen not only as harboring the least favored sections of society but also as offering mankind its brightest prospects."

The universal acceptance of the essential role of integrated rural development is perhaps best illustrated by the decision to substitute for the Second World Conference on Agricultural Education (originally scheduled for the early eighties) a commission meeting within the framework of the forthcoming World Conference on Agrarian Reform and Rural Development to be convened by FAO in early 1979.

At the moment, three subjects in particular call for intensive research and study: first, the improvement of the "image" of agriculture, a goal that the educational system can further significantly by changing the attitudes of children; second, the strengthening and upgrading of the corps of middle and low level extension personnel; and, third, the realignment of the objectives of teaching at all levels to support integrated rural development.

■ **Roger Savary, International Federation of Agricultural Producers, Paris**

Call For Copy

Upcoming issues of *DCR* will focus on communication planning and policy-making, needs assessment, community development, family-planning activities, learning games, and formative evaluation in communication projects.

Knowledgeable and experienced readers are invited to submit manuscripts on these subjects to the editor. Articles on other subjects of interest to *DCR* readers will also be reviewed, since even theme-dominated issues will carry timely material on a variety of subjects.

Highest priority will be given to previously unpublished material, and every effort will be made to review every manuscript.

Liklik Buk — A Pocket Encyclopedia For Village Leaders

Communication has always been a challenge in Papua New Guinea — where over 700 languages are spoken. With the coming of independence in 1975, the need for a broad base of informed citizens compounded the considerable problems of information exchange.

Like many developing countries, Papua New Guinea accords high priorities to agriculture and rural development as means of decreasing both food imports and urban migration. These priorities often require communicating with those people most difficult to reach — rural villagers who may live in isolated spots and who probably speak only the language of their area.

How do we reach these people? Perhaps the most obvious way is through the people around them. Illiterate farmers, like all of us, need to have information presented in an understandable form. Charts and graphs on glossy paper are not very impressive to village farmers. Their assessments are usually made on the basis of evidence they can gather themselves.

For example, pigs in Papua New Guinea are traditionally allowed free run in the villages and surrounding areas. Only gardens are fenced. This system is easy to maintain — the pigs forage for food and sleep in or under the village houses. So, when farmers see a local school or agri-

cultural extension officer building a pig house, they scoff. "It is so much work to build a pig house and keep it clean, as well as bring food to the pigs. Hardly worth the effort!"

The scoffing farmers, however, keep a close eye on the project and, if it goes well, they may note that the pigs grow big, that the area is clean, and that the pig manure helps gardens and the crops grow well. The farmers may consequently decide to build pig houses. If they do, the school project will probably afford an opportunity to continue to observe and learn.

Such communication is usually between the farmer and someone he knows, someone who lives near him but who has a wider scope of acquaintances — a teacher, a pastor, or an agricultural extension officer. And this "someone" is probably literate.

Aiming at expanding this kind of communication, the Melanesian Council of Churches has come up with *Liklik Buk,* a rural development handbook/catalogue for Papua New Guinea, intended for literate village leaders who can communicate by doing.

Liklik Buk represents an effort to present in one book a wide range of possibilities and information. It contains short articles on crops, fertilizers, animals, health, simple technologies and processes, as well as lists of useful books and organizations. An article on a crop, for example, may contain some specific information on where to obtain seeds, how to grow them, what experience farmers have had with the crop in Papua New Guinea, as well as where and how to obtain further information. In addition, the *Liklik Buk* Information Centre in Lae provides information in answer to readers' requests. It is also organizing a small library.

Liklik Buk has been well received both in Papua New Guinea and abroad. The second edition of 12,000 copies sold out in less than a year and is currently being reprinted. Agricultural training colleges, teacher training colleges, and the PNG Department of Primary Industry have been bulk purchasers. Comparable organizations from the Solomon Islands and other South Pacific island countries have also ordered the 'buk.' The book has found a large audience overseas among the 'back to earth' cult too.

As a sizable portion of village leaders are literate in Pidgin but not English, *Liklik Buk* is currently being translated into Melanesian Pidgin — quite a task since Pidgin is not a very defined or technical language. The Pidgin edition will be based on the second English edition, but the presentation will differ in view of the new target group.

The true impact of *Liklik Buk* awaits evaluation. But if robust sales mean anything, needed and once scarce information is making its way toward some of Papua New Guinea's most geographically and linguistically isolated people.

■ **Ed and Mini Arata, Liklik Buk Information Centre, Lae, Papua New Guinea**

Development Communication and The University

Can regional universities handle the prickly but essential job of integrating government nonformal education efforts in development communication at the community level? This might well be the real question behind a three-year exploratory study on communication technology for rural education that begins in the Philippines early this year, with World Bank funding, under the aegis of the Educational Development Projects Implementing Task Force (EDPITAF) of the Department of Education and Culture.

The new study is one component of a pilot project on the use of "cost-saving communication technology" — chiefly radio and the print media abetted by personal interaction — to expand educational opportunities in the countryside. Its test site is the University of the Philippines at Los Baños (UPLB), which has a strong College of Agriculture and whose avowed clientele is the rural poor.

Worked out in answer to the universal lack of development-communication teaching materials that can be plugged into the media, the exploratory study will also test a learning system through which such materials can flow and be used by target groups. The framework of the system already exists: the constellation of regional and farmers' training centers that make up the newly created Philippine Training Center (PTC).

Meant for the continuing education of trainers, extension workers, and local leaders, the PTC has its national office and regional center quartered at UPLB. Extra planks might have to be built into the framework to meet the unique requirements of the communication-technology study but, whenever possible, the study will ride on the PTC system, which it was in fact designed to complement in its pilot stage.

The development-communication study team must interact with assorted service, media, educational, and civic agencies currently engaged in teaching farmers, out-of-school youth, and other residents of rural communities. It will have to mind internal linkages too, for the university has its own sticky spots in which inter-disciplinary projects can bog down.

But the biggest task is dovetailing study objectives and operations with those of the other agencies ministering to the same clientele in the pilot site, since each organization has its own commitments and identity to uphold. The major agencies involved are the Departments of Agriculture, Natural Resources, Agrarian Reform, Local Government and Community Development, Public Information, the National Media Production Center, and the PTC.

The politics of inter-agency cooperation and coordination has always been thorny, in the production of development-communication materials as elsewhere. It is here that a regional university that has a relatively disinterested image, that is highly credible to the rural clientele because of its long-standing extension ties, that is half-in and half-out of the government bureaucracy, and that is thus less subject to pressure can make an acceptable coordinator. Its rural educational radio station and communication teachers and researchers are also plus-factors in this case. Probably its best asset, however, is its wealth of reliable and up-to-date information on agriculture and related fields — information that can be converted into media materials.

The content of the radio programs, print materials, farmer forums, and other supportive media of the Los Banõs study is openly and unabashedly technology, a research-based practical and social technology of the sort that a university is best equipped to generate. Unlike similar radio projects elsewhere that stress the social unfolding of the individual, the Los Baños study, in the tradition of agricultural extension, sees economic, occupation-related information as the starter of development.

University scientists, even the agricultural kind, have always been subject to charges of ivory-tower research, sometimes with good reason. Today when "appropriate technology" and "popular participation" have become by-words in development, the equally current concept of technology transfer in relation to the rural poor comes under some suspicion. If this handicap persists, fielding scientists so that they may get an accurate reading of rural problems may be the answer. The development-communication study may have yet another potential avenue for dialogue: its multi-media rural communication system for the use of extension workers, local leaders, rural families and (to close the circle) service agency decision-makers.

If, later on, the exploratory study graduates into a full-blown project with other regional sites like the PTC, it is going to want many more development-oriented young people trained in operating educational community media. The regional universities can plan ahead for this and similar eventualities by taking a hard look at their communication and extension programs now — if, that is, they are among the new kind of universities coming up in the Philippines and in other developing countries that see themselves as full partners in rural development.

■ **Nora C. Quebral, Professor of Development Communication, University of the Philippines at Los Baños**

Folk Media Exchange

Ross Kidd of the Boipelogo Education Project in Botswana is building a collection of documents on folk media, the contents of which will be reflected in an annotated bibliography he plans to append to his doctoral thesis. Write to Kidd at Private Bag 005, Gaborone, Botswana.

A Communicator's Checklist

1 Some social scientists must go to incredible lengths to rescue common sense from a live burial by their colleagues, and Wilbur Schramm is on the side of the rescuers. He's a master synthesizer who knows a good idea when he spies one and who gives credit where it is due. Moreover, he indulges in few of those guilt-ridden exercises of revisionism whereby some academics try to "historicize" (that is, disown) their past goofs. Schramm is, in other words, well qualified to perform the task he has undertaken in *Big Media, Little Media — Tools and Technologies for Instruction:* a systematic assessment of the research on the uses, costs, and potential of educational media.

At once an inventory and a manifesto, *Big Media, Little Media* was written under a U.S. AID grant in 1974 and revised in 1977 in light of new research findings and extra time to reflect. As the title implies, Schramm's method of investigation in this book is comparison. What is not immediately apparent is the pervasiveness and complexity of the big/little contrast. At the most general level, Schramm expresses the opinion that it is time to concentrate on micro-research (research that, for example, "compares two or more ways of accomplishing a specified instructional task . . . for a given kind of student in a given situation") and to let macro-research (research that, for example, "compares the outcome when sixth-grade arithmetic is taught by a classroom teacher to the outcome when it is taught by an instructional medium") slide for a while.

Accordingly, he himself devotes less attention to distinguishing between the small fry and the big fish among media options (a fairly routine task once definitions are worked out) than to laying the groundwork for the development of a three-dimensional taxonomy of media uses, learning tasks, and learner needs (audience composition). Indeed, as if to astonish the mind's eye, Schramm adds a fourth dimension or range of considerations to this construct — cost-benefit and unit-cost analysis.

Given Schramm's firm commitment to resist absolutes and his equally firm belief that educational media planners will be more or less at sea until these various sets of categories can be put on the same grid or at least cross-referenced, it is not surprising that the taxonomy he dreams of does not emerge from his book. Schramm does not seem surprised anyway. He seems to recognize that his is a mid-wife's function and that by putting the findings of economists, psychologists, and media analysts into parallel forms and identifying the many research gaps, he is setting the stage for the work that remains to be done before all the pieces make sense. This recognition, in fact, probably accounts for Schramm's brave decision to treat learning theory, economic analysis, and technological capabilities as the one messy whole that they are instead of as independent variables that will combine in the same fashion and with the same results under all conditions.

As the chapter on the economics of mediated education suggests, nothing is without its costs. Even intellectual integrity. Schramm's willingness to entertain several sets of questions simultaneously and to bestride so much academic territory leads him into a few self-contradictions. Particularly confusing is his waffling on the question of appropriate technology: he uses the term "super media" throughout the book only to debunk it in the conclusion and states in Chapter 8 that "a combination of media is likely to accomplish more than any medium by itself" after quoting in Chapter 2 evidence to the effect that "in numerous conditions the use of two channels (to the brain) may be less productive than one."

Flaws and all, *Big Media, Little Media* stands a chance of becoming a classic text. It is full of examples and case histories, abundant in insight, broad in conception, and well worth reading.

Big Media, Little Media — Tools and Technologies for Instruction can be obtained from Sage Publications, Inc., 275 South Beverly Drive, Beverly Hills, California 90212, U.S.A. for $17.50 in cloth and $7.50 in paper. ■ **K.C.**

2 A propagandistic approach and a heavy dose of Swedish political thought are the two hurdles for readers of *Whither Video? Commercial Commodity or Public Property* by Margareta Ingelstam. Yet, the book is a valuable morning's reading for those considering videogram investment. If you know people in a national government currently wrestling with communications law, they may (to use a pitchman's phrase) thank you for recommending this English-language summary of an apparently longer Swedish work.

"Videogram" is the translation of a Swedish term for videotapes, videodiscs (a technology still in development), video cassettes or any picture or sound-and-picture material shown on a television set without broadcast reception. *Whither Video?* offers cursory analyses of the various systems available, including an incomplete rundown of specific brands, prices in Swedish Krona included (U.S. $1.00 = Skr 4.65, a fact not in the book).

This work includes what may be the first analysis of videogram use in library activities and community television production — areas in which Sweden is a world leader. Suggestions are offered on how videograms can be employed, and there are tips on the use of the new technology in teaching. (Don't allow educational material to run more than five to eight minutes, the logic goes, or group members get bored and impatient about having their say!)

The method chosen for distribution of pre-produced videograms is an issue considered critical to the future of the technology, and the author offers various options.

Ingelstam also steps onto the newly plowed ground of television's technological danger: not injury from X-rays or eye strain, but the growing fear that a TV-suckled society loses the ability to distinguish reality from unreality. She cites a range of studies to justify her statement that "all sound and picture programs involve particularly serious hazards for children." She worries about the human race being reduced to a "media mollusc," and she clearly hopes readers will at least consider the advantages of doing without television — a subject only now beginning to be discussed in the U.S., the world's most TV-saturated society.

One thing this book does not do is offer any true discussion of the issue cited in its title. The book is wholly on the side of government control of the technology, non-commercial development of videograms, and a videogram-distribution system divorced from commercial and mass marketing considerations. There is one remark from the "commercial" side of this issue, that from a distributor of violent and sexually explicit films. It is a statement chosen to provoke loathing for the speaker's species in the stomach of every reader. Not even Walt Disney is spared. In the writer's mind commercial television is apparently all bathwater, no baby. Her viewpoint has been absent from most literature and criticism of the medium, particularly in the television-dominated U.S. media.

The book offers many video-development alternatives, and even two 1996 fantasy interviews with highly placed government decision-makers, "videologists," discussing the position and role of video under two differing scenarios of development.

"Whither Video?" is more a social/political document than a technical one. But then, how are decisions made where you are?

"Whither Video? Commercial Commodity or Public Property" can be obtained from TRU, Fack, S182 71, Stocksund, Sweden. Specifically request either the English translation/summary or the longer Swedish work ("Vad ska vi ha med video grammen? Handelsvara eller allman rikedom.")

■ **Scott Shuster, broadcaster and freelance writer, Washington, D.C.**

3 Those familiar with previous editions of the *Aspen Handbook on the Media* should respond enthusiastically to the expanded *1977-1979 Edition.* Others would do well to peruse this sourcebook, which provides its readers with a profile of American mass media research and of publications and institutions focusing on communication. In the early 1970s, the Aspen Institute Program on Communication and Society generated discussion on national communication issues and the policies needed to address these issues.

Thus, as editors William L. Rivers, Wallace Thompson, and Michael J. Nyhan point out, the *Aspen Handbook* concentrates on research, publications, government agencies, and other institutions "particularly concerned with national policy issues in mass communications." However, they add in their preface, this most recent *Handbook* reflects the rapid growth and broadened scope of the communication field, listing new conceptual categories, humanistic questions, and technological considerations. (It is more than four times its original size of 97 pages.)

The increased number of Canadian institutions reflects an attempt to make the *Handbook* descriptive of English-speaking North America and not just the United States. Indeed, Canadian-American commonalities abound: the joint use of the CTS satellite is just one example. Certainly, in future editions, the international and overseas parts of the *Handbook* will have to grow to keep up with what is burgeoning in the communications field.

The Aspen Handbook on the Media does not attempt to profile the communications industry. That behemoth was tackled by Christopher H. Sterling and Timothy R. Haight in the recently published *The Mass Media: Aspen Guide to Communication in Industry Trends.* Rather, the *Aspen Handbook* selectively provides comprehensive and current information on (1) universities with research programs and communication departments, (2) non-academic institutions conducting communication research, (3) organizations supporting communication research, (4) communication organizations of every sort, (5) media action groups, (6) U.S. and Canadian government communication policy-making bodies, (7) communication law courses, (8) international and overseas communication organizations, (9) special libraries and resources on communications, (10) communication periodicals and books, (11) communication bibliographies, (12) selected films on communications, and (13) an index to it all.

For those interested in applications of communication technology, a new section on film — films about television, radio, newspapers, and future technology — should hold particular interest.

Careful attention has been given to the descriptive annotations so that one who has spent some time with the *Handbook* should have a good sense of American communication trends and policies, and the editors have provided ample source names and addresses for further investigation.

The 1977 edition of the *Aspen Handbook on the Media* can be mail-ordered from Aspen's Publishing Program Office, P.O. Box 1652, 360 Bryant St., Palo Alto, CA 94302, U.S.A. for U.S. $6.95. ■ **J.M.**

4 *VTR Workshop: Small Format Video* by Lovetta J. Atienzu is a basic how-to manual for the communication field agent without technical training and with an interest in using portable video equipment.

The monograph describes half-inch portable video hardware and outlines steps for making tapes, editing, and setting up home-base and mobile facilities. The technical chapters are limited to coverage of half-inch "portapak" type equipment and are reminiscent of material in several video handbooks that appeared in the U.S. in the early 1970s. However, particular attention is paid to problems the development worker is likely to encounter with the equipment in the field.

Unfortunately, the applications or "why use it" section falls at the book's end. The apparent, but dubious, assumption is that the reader is already familiar with developmental applications of video.

VTR Workshop: Small Format Video, one of the UNESCO series called Monographs in Communication Technology and Utilization, costs $3.00. It can be mail-ordered from UNESCO, 7 Place de Fontenoy, 75007, Paris, France.

■ **Heather Hudson, Academy for Educational Development**

5 Clearly, the aim of Rex Keating and the International Planned Parenthood Federation in publishing *Grass Roots Radio* was to demonstrate how to use radio as a development tool. To that end, they expect their audience to be fieldworking personnel in developing countries. Keating and IPPF hope that by showing how to use radio, its use will be expanded and integrated into the local communication structure.

The author goes into some detail about broadcasting operations, the inner workings of the tape recorder, the basics of interviewing, and script-writing. He also gives a number of case histories.

All this material is useful and accessible to the readers, however, only if they are comfortable with technology in general and have a fairly sophisticated command of English. As a consequence, the manual is, in effect, put out of the reach of those for whom it was intended.

Grass Roots Radio can be obtained for U.S. $5.00 from IPPF, 18-20 Lower Regent Street, London SW1Y 4PW ENGLAND. Prerecorded tape cassettes of examples of the use of radio in family-planning efforts around the world also cost $5.00 each. ■ **J.B.**

6 At the recent International Development Conference in Washington, Phillip Coombs reiterated a series of long-standing arguments (some as old as 25 years) for stressing local participation in the design and implementation of development programs. The new focus on "reaching the poorest of the poor" has, in fact, led some planners to believe that project design and implementation must actively involve the very "lowest" groups of society, not just country-government officials. This approach is often characterized as "bottom-up" or grassroots development.

Jeanne Moulton's doctoral dissertation, *Animation Rurale: Education for Rural Development,* makes a timely contribution to this discussion. Moulton takes an exhaustive look at the 18-year-old African experiment in *Animation Rurale,* focusing on its historical origins, its theoretical infrastructure, and its practical results in Senegal and Niger.

Animation Rurale, theoretically at least, is an attempt to carry local participation to one of its logical extremes. It emphasizes the practical preparation of rural people for economic development, stresses indigenous cultural values over colonial ones, focuses on the capacity of rural people to determine their own development destiny, reflects the belief that rural development is a social rather than an individual phenomenon, and proposes that the transformation of the people at the bottom necessarily involves the transformation of whole institutions.

Animation Rurale differs from its Anglo counterparts. As Moulton suggests, its French Catholic historical context makes it more hierarchical and authoritarian than the methods favored by many Anglo observers. But *Animation Rurale* does nevertheless appear to be a long-term, structured, and systematic attempt to achieve grassroots development.

In a creative review of four development theorists, Moulton leads the reader to conclude that *Animation Rurale* failed to achieve its principal objective, the involvement of rural people in the decision-making processes of development.

It is at this point that Moulton's argument loses power. Her suggestion for making *Animation* work amounts to little more than the reiteration of the shopping list of pre-conditions that planners have been demanding of developing countries for years: top-level support, decentralized decision-making, financial resources to support long-term training, political stability, etc. Not exactly the pre-conditions for development, these ingredients represent development itself. Indeed, if these conditions do represent the prerequisites of change, then grassroots development may be hopelessly impractical.

This study is compelling because it raises important and timely questions. If international agencies are focusing on the poorest of the poor, if grassroots dogma is again being dusted off, polished up, and publicly touted, then should we not ex-

amine programs like *Animation Rurale* closely and determine first if inherent flaws mar such proposals? Certainly other development projects have been weakened by the seemingly unavoidable conflict between the needs of ruling elites and the requirements of social development. Moulton demonstrates how the practical demands of power politics can take precedence over the needs of poor people, even in the presence of a supportive charismatic leader. What is there in our new proposals to suggest that idealistic motives will fare any better this time?

Much of the book is devoted to a description of how *Animation Rurale's* theoretical concepts were applied in Senegal and Niger. While the histories of the programs vary, their results are strikingly similar. In both cases, the theory was never fully implemented. More important, the original goals and processes of *Animation Rurale* were distorted, often beyond recognition, by the practical political needs of the ruling elites in both countries. While the Senegalese program enjoyed a three-year honeymoon during which time government officials supported the involvement of rural people in national decision-making, the demands of rural people ultimately became more an obstacle than a contribution to the maintenance of power. The Senegalese goals of 1960 centered on rural consciousness-raising; by 1968 they emphasized civic and moral training, and by 1971 they focused almost exclusively on technical training. As Moulton states:

> "Whereas animation did not lose the ideological support of those at the national level who had conceived it, pressures from various interest groups forced a conflict to be resolved on the national level which resulted in curtailment of the program. After 1962 the vigor of *Animation Rurale* began to dissipate."

The coercive influence of power politics on local participation was even clearer in Niger, where the absence of a national ideology similar to President Senghor's African Socialism confined the program to a scattering of patchwork projects and contributed to its domination by French experts whose presence made program goals less acceptable and less understandable to rural participants.

The results of this study are valuable because they call some strong and widely held beliefs about development into question. They constitute a reminder that fighting the results of poverty is probably more satisfying personally but ultimately less essential than entering political battles in the halls of power.

Animation Rurale: Education for Rural Development can be obtained for U.S. $5.00 from the Center for International Education, University of Massachusetts, Amherst, Massachusetts 01002, U.S.A.

■ **Bill Smith, Academy for Educational Development**

7 While far from breathtaking, the *Report on the Conference and Workshop on Nonformal Education and the Rural Poor* is livelier than many documents of its ilk. More questioning than declarative, it is occasionally airy but seldom windy. And — good news for the report-weary — its editor and the *rapporteurs* resisted the temptation to see every discussion as the stuff of which a consensus is made, so it packs a few surprises.

Less to its credit, the *Report* gives at its weakest seams. A few early sections embrace too much material. Others contain so many lists that the reader feels disposed to treat them as reference works and to browse rather than pay close attention.

More down-to-earth are the hundred or so pages devoted to reviews of specific projects. Chapter Four covers three rural development projects that use nonformal education principles. Chapter Five focuses on the use of nonformal education in nutrition, health delivery, and family-planning projects. Chapter Six explores consciousness-raising efforts in rural Ecuador, Guatemala, and Botswana. These project reports, shortened versions of papers delivered at the conference by project evaluators or managers, vary in length, focus, and degree of documentation, but all represent solid and easily assimilable research. Similarly, each leaves some scores unsettled, but all deserve to be considered part of the basic literature on education in development efforts.

This last point leads irresistibly to another, which is that much of the best material in this report is reprinted and abridged. Only the small-minded need blindly uphold the copyrighter's cause, but a reader cannot be blamed for preferring to lay hands on the real thing and for expecting a new book to offer what existing publications do not. True, the repetition is not irritatingly extensive, but the problem touches upon the fundamental question of audience identification: What sort of use will those for whom the book is intended make of six excerpts, even six such provocative excerpts?

Accounts of the panel discussions featured at the conference are easy enough to reckon with, though perhaps too brief to be of much practical value. In the summary of the forum on using media systematically in nonformal education, misconceptions (about the rural poor) that hamper successful communication planning are pinpointed, and the social and economic considerations that media designers must address before selecting a communication medium for a particular area and message are identified.

The resume of the panel called "Improving the Performance of Nonformal Educators" zeroes in on ways to develop fieldworkers' nonformal education skills. This panel discussion apparently echoed the theme of the whole conference, which was "not to probe the mysteries and complexities of rural development *per se*, but to explore on an 'interdevelopmental sector' basis . . . better ways of relating nonformal educational concepts and methodologies to the central needs of the rural poor."

Parallel to this last high-minded purpose is another — "to explore on an 'interdevelopmental sector' basis . . . better ways of relating nonformal education concepts and methodologies to the central needs" of those who would use them to help the rural poor. This book represents a fair stab at fulfilling both objectives.

Edited by Richard O. Niehoff, *Nonformal Education and the Rural Poor* can be obtained from the Institute of International Studies, The College of Education, Michigan State University, East Lansing, MI 48824, U.S.A. ■ **K.C.**

8 Appropriately enough, "Communicating with Pictures" is heavily illustrated. At the proverbial thousand words per picture, it speaks volumes in 28 pages. But the sparse text is essential, primarily because one of the main points made in the pamphlet is that, by themselves, pictures can rarely be counted upon to convey ideas precisely and forcefully.

This broadside contains the findings of a study carried out in 1976 and samples of the visual aids tested. It is the record in shorthand of a joint attempt by UNICEF and Nepal's National Development Service to answer three questions: 1) Can pictures alone communicate ideas and information to villagers? 2) What kinds of pictures do villagers find most meaningful? Do different colors possess special meanings for villagers?

In brief, the team found that villagers need help in interpreting illustrations but that, once explained, pictures can effectively convey and keep alive important new ideas. It found that the visual imagination requires priming, that nonliterate villagers are most apt to "get the message" if it is borne by photographs doctored so that all inessential information is blocked out, and that colors, like words, have powerful culturally influenced connotations. It also made many other less general discoveries — all of which are taken into account in the researchers' recommendations.

Whether the specific findings of this study mean anything outside of Nepal is anybody's guess. But the general conclusions are well-reasoned and ought to be welcomed by a wide audience. As a bonus, this pamphlet helps readers identify their own preconceptions about the meaning of visual signs and lets them in for a few painless surprises.

"Communicating with Pictures" can be obtained from the National Development Service, Kirtipur Campus, Tribhuvan University, Kathmandu, Nepal. ■ **K.C.**

The editor welcomes disinterested reviews of new or neglected books on communication technologies, methods, or issues.

Next Time (Continued)

adequate for Ph.D.s, M.A.s, and college graduates. The greater need is for people who can be trained to work directly with farmers who are ready and able to adopt some simple practices that can increase production. I would recognize the need for para-agriculturists, akin to para-medics like the Chinese "barefoot doctors."

Go easy on equipment. I would be wary of buying too much modern sophisticated communication equipment. The desire to acquire more audio-visual and related equipment, especially when foreign funds are available, is hard to resist. But many audio-visual consultants have failed to carry through on use once the equipment has been acquired.

Decentralize and localize. I would localize operations to the greatest possible degree. A paragraph on what a local farmer does is worth more than pages of speeches by a faraway dignitary. Similarly, I would make sure that radio programs came from a source local enough to reflect local conditions.

Exhibits developed locally would be better than fancier but over-generalized ones from the state capital. I saw dramatic proof of the value of decentralization when a booster radio station in India was converted to broadcast live. When farm programs were localized and translated into the local dialect, farm listening jumped.

Maximize distribution. I would try to maximize the distribution of the available information. Typically, information workers in both developed and developing countries produce adequate information messages and materials, but fall short in distributing their product. In more positive terms, one of the most successful demonstration programs I saw in India featured a large number of field demonstration plots located within walking distance of the local farmers.

Keep track of research. I would encourage greater awareness among counterparts of current research and would promote application of new research as it becomes available.

Finally, I would recognize that the impact one consultant can have is, at best, miniscule. I would be resigned to making small gains and hope that they might outlast me. ■

Development Communication Report, published quarterly by the Clearinghouse on Development Communication, is distributed free to over 6000 development professionals.

A center for materials and information on important applications of communication technology to development problems, the Clearinghouse is operated by the Academy for Educational Development, a nonprofit planning organization, and supported by the Development Support Bureau of the U.S. Agency for International Development as part of its program in educational technology and development communication.

Readers are invited to submit typed manuscripts of no more than 1000 words and to send in photographs.

Highlights of the Fifth Pan-African Literacy Seminar

"Do-it-yourself" was the byword of the Fifth Biennial Pan-African Literacy Seminar, held in Nairobi, Kenya, from December 13 to December 22, 1977.

The overall task of the seminar, which was held in cooperation with the Ministry of Housing and Social Services of the Republic of Kenya and other Kenyan agencies, was to permit adult literacy workers, other extension educators, and journalists to examine the main approaches to adult literacy work used in Africa today. The simultaneous interpretation of most sessions permitted rich exchanges between Francophone, Anglophone, and Spanish-speaking delegates. Reflecting the theme of *Literacy Materials and Methods*, which occupied morning plenaries and seminar sessions, were two sub-themes discussed in smaller groups: the rural press and appropriate techniques for evaluating literacy materials and programs.

At daily plenary sessions, 130 delegates from 27 countries heard reports from Tanzania, Kenya, Botswana, Colombia, and Ghana on new methods of combatting adult illiteracy. The main purpose of these plenaries was to show how traditional skill-building techniques can be merged with psycho-social emphases on learner participation and on meeting learner needs in curriculum design.

Reports by Mary Eyakuze, Director of the Mwanza National Literacy Centre, Daniel Wabwire and Mary Opiyo of the National Christian Council of Kenya, and a team led by Ross Kidd and Lesetse Matshaba of Botswana Extension College covered the use of picture codes related to adult needs expressed by the learners and ways to develop literacy skills by using "generative terms."

Innovative efforts to involve pupils in preparing reading materials were presented by the director of the Laubach program in Colombia, Dr. Luis Londono. His stress on teacher-learner cooperation as a means of identifying pertinent themes and of involving new literates in the expression of their own ideas and knowledge in developing follow-up literature underscored the "do-it-yourself" emphasis.

The director of the Bureau of Ghana Languages, Mr. Felix Konu, spoke about the early impact of a local language strategy (applied in Ghana as long ago as 1951) on post-literacy materials and on the rural press. (The Ghanaian program featured rural newspapers in four major languages.)

A review of the reports suggests that the major difference in the production techniques discussed is between reliance upon photographs versus the heavy use of line art. The photos used in the Kenyan programs, for example, had been carefully selected, and shots with noncontrastive or crowded backgrounds were avoided. The Botswana program relied on line-drawings for its code pictures.

Delegates were free to attend one of two working groups in the afternoons. The workshops were devoted to practical presentations and discussions. The rural press workshop concentrated on the production of post-literacy newspapers or booklets at the village level, and on means of involving new readers in the preparation of materials and the choice of subjects.

Key duplicating and offset processes for producing rural newspapers were reviewed by N.E. Lingard of Gestetner of East Africa, Ltd., and by Mr. M. Kaboye of the National Literacy Centre in Niamey, who demonstrated the silk-screen duplicator (or "limographe") used in Niger. Here, too, the seminar participants were able to work on the production of newssheets at a "do-it-yourself" level.

The seminar workshop, led by M. Amadou Berthe, National Director of the Literacy Centre of the Republic of Mali, divided into Francophone and Anglophone task forces. Each one produced a duplicated rural-type newspaper. The Francophone version could have been done in any village, as the master copy on stencils was handwritten on twelve handsome two-column pages and included only line drawings. The Anglophone edition was a simulated village paper, though the materials were typed. It carried several well-executed line drawings that highlighted characteristics of the Biennial Seminar — the "village" at hand.

The evaluation workshop drew about half of all the seminar participants. For expediency's sake, it was also subdivided into two groups. One debated the larger subject of participatory versus external observer evaluation before discussing specific program components that require evaluatory techniques. The second, led by Dr. Dennis Lowry of Temple University's School of Communications and Theater in Philadelphia, studied specific "do-it-yourself" evaluatory techniques.

A new evaluatory procedure that won the approval of most of the participants for "do-it-yourself" use was the Cloze test. Dr. Lowry demonstrated the application of the Cloze test in self-made research designs for checking reader comprehension of reading materials used in class.

Both the final report of the Biennial Seminar and the participants themselves have recommended that follow-up seminars be organized on a regional basis to allow more people to benefit from them. Follow-up seminars on writing for new readers and on using screen-duplicator equipment are already planned.

A seminar report containing the main plenary presentations and including the final report of the seminar groups and the workshops will be produced by Afrolit Society for its members and published in July of 1978. Inquiries about the report and about the follow-up seminars can be addressed to Afrolit's General Secretary.

■ **Charles T. Hein, General Secretary, Afrolit Society, Box 72511, Nairobi, Kenya**

HOW I'D DO IT NEXT TIME: Reflections of an Agricultural Information Consultant

Readers expecting to find "Dilemma in Country X" here in its customary place need not despair. The following article represents the distillation of many dilemmas encountered over many years in many countries. It was written by Dr. R. Lyle Webster, whose long and eventful career in agricultural communication has included stints as the Director of Information of the U.S. Department of Agriculture, as a consultant on communications and agricultural information with the Ford Foundation in India, and as the first director of the East-West Communication Institute in Honolulu.

Dilemmas in Country X: Candid discussions about failures *will be featured again in the next issue. The editor invites readers to submit reports for this column and will upon request withhold authors' names — as well as those of the people, agencies, and countries involved in the projects described.*

After a lifetime of communication work, mostly in agriculture, I have a few firm ideas about how I would undertake another foreign consultancy. If I were to become a foreign agricultural communication consultant again, I would abide by certain basic commandments.

Understand the importance of attitude. My basic attitude would reflect tolerance and humility. I would recognize that not all knowledge resides in the country from which I come. I would keep in mind the fact that, largely as a result of development work of the last few decades, most poor countries have substantial numbers of people who have studied and trained abroad. I would believe that these people could achieve results when supported by the prestige and competence of a wise consultant. My resolve would be to keep a low profile, to listen more than talk. I would vow, above all, to avoid that self-defeating occupational disease — trying to do it myself rather than helping my counterpart perform the task at hand.

Capitalize on culture shock. I would brace myself for some "culture shock" when going to another country. But I would try to prepare for and to capitalize on it, knowing that I could really understand a culture only after living in it. Culture shock can bring about sympathetic understanding. But for some, I fear, the end result is in reality only a feeling of how different "they" are from "us" (and, all too often, a rather disdainful attitude toward the way "they" do things). I would never forget that my clients have a history and a culture and a way of living that has met many of the intellectual and spiritual needs of the people for centuries.

Appreciation of another culture is difficult, but one can cultivate it by reading and by contacting people who have had experience living in it. My two years at the East-West Communication Institute in Honolulu after my experience as a foreign consultant gave me a rich understanding of the importance of knowing the culture of a country in which one works. I often reflect on how much more effective I could have been as a consultant if my time at the East-West Center could have been put in at the beginning of my career.

Talk the language. My language would be that of the people I was working to aid. Despite all the arguments about studying a language that "we won't use again," my firm belief is that if consultants are able to communicate, no matter how badly, in the local language, they will be respected for trying.

I would hope to live simply and unostentatiously. Foreign consultants need not live in village huts, but living in luxury often offends the sensibilities of their co-workers from the host country.

Maintain close contacts. I would accept only those consultancies associated with programs that call for real continuing contact with farmers and that allow consultants to make actual contact. I also would want to be certain of my precise duties and responsibilities.

Look and listen. I would stress communication that can be absorbed by looking and listening. This means radio and visual means (but not necessarily a lot of audio-visual equipment). I cannot quarrel with *DCR's* "Reconsidering Print" issue: Print has its place. But I would remember that most people who need help are not literate enough to rely mainly on what they learn from the printed word.

I would, however, encourage the use of mass media to reach influentials. For example, the press should be used to reach the leaders in a country. A national newspaper will not print fertilizer-dosage recommendations (and most of its readers would not have use for them). But it is interested in economic progress, and the key people in the country's government — its legislators, business leaders, and academicians — all read.

Value in-service training. I would accord high priority to in-service training. After six years in India, I concluded that greatly increased in-service training was the most urgent need in the communication component of agricultural development there.

Indeed, many countries now have enough trained professionals in most fields. What is needed is greater competence among a larger number of persons who work as liaisons between the professionals and the farmers. The supply line is

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Development Communication Report

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viewpoints: the farmer's, the extension agent's, the researcher's, the agronomist's, the agricultural planner's, and others

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USING THEORY IN COMMUNICATION PLANNING

For many field professionals, theory can be a dirty word, conjuring up images of egghead professors in musty offices scribbling out indecipherable mathematical equations and less understandable prose. And yet, these same field professionals use theory all the time, even if unwittingly. Whenever development professionals recommend a certain program, give advice, or prepare plans, they act on the basis of ideas about what will happen if certain things are done, in certain ways, in a certain order.

As we go about developing the field of communication planning, we draw on existing theory of a number of kinds, four of which are particularly relevant to communication planning. Three of these are reasonably well developed, though changing constantly: communication theory, planning theories, and development theory. The fourth, ever with us but too often overlooked, is the theory that each planner or group of planners evolves out of the experience of solving problems in a particular social, cultural, and organizational context.

Communication Theory

Communication theory deals with the process and effects of communication of all kinds. It is the kind of theory a planner uses, consciously or unconsciously, in selecting media, in designing messages and software, and in planning evaluations. Thus, it is a *theory in planning*: something planners use to help them choose from among an almost endless number of communication options in light of certain goals.

Plainly, no single communication theory will make the planner's job easy. The various theories that explain and predict the effects of different kinds or mixes of communication are related, but they are more or less helpful given different kinds of communication tasks, goals, and contexts. Information theory, for example, aids the planner designing mass campaigns intended to alter levels of information. But if the goal is to change attitudes or values, persuasion theory proves more useful.

(Continued on page 2)

ANOTHER LOOK AT KNOWLEDGE PRODUCTION AND UTILIZATION

Most communication planners have in mind some image of an information-communication system. This picture probably includes notions of how information is generated, formed into messages, and disseminated through channels to target or user audiences. The image may be of a well-defined and widely accepted model or of a highly experiential and personalized "style" of communication planning and communication. Either way, some implicit or explicit image of an information system guides the planner.

Those who plan what is labeled "development communication" often concern themselves especially with systems that attempt to communicate information on technology. Historically, relatively simple information-system models (an example of which is the "research, change-agent or linker, adopter model") have been employed. But numerous criticisms have been leveled at such systems, particularly at (1) the assumption that knowledge flows only linearly, from researchers through technology to users, (2) authoritarian, persuasive, or manipulative one-way communication (invariably "down" through the system), (3) the creation of dependent rather than collaborative relationships, (4) the assumption that only knowledge obtained through scientific research is relevant to problem-solving, (5) the assumption that technology can be *transferred*, which runs counter to the vitally important recognition that an interactive communication process can result in the development of adaptive, intermediate, or improved indigenous technology, (6) the fact that the responsibility placed on "linkers" is usually far greater than that placed upon the linked, (7) the lack of concern with how benefits from "trickle-down" communication are distributed, and, probably most important, (8) the ineffectiveness of many programs based on present information-communication system models. Indeed, only in the last two decades have the systematic conceptualization and study of knowledge

(Continued on page 3)

Communication Planning at the Regional Level

In the developing countries, problems posed by the need to *reorganize* existing complex communication systems are of course comparatively few, a state of affairs that gives rise to the expectation that introducing new media in such nations is comparatively easy. On the regional level, in particular, the trend is towards expecting too much of new telecommunication technologies on the assumption that they will improve the efficiency with which information is transmitted to the populace and will thus help assure the effectiveness of two-way communication.

To my mind, these assumptions and expectations pose some tough problems. We naturally think of communication as a means of diffusing information among the people and of transmitting information from the authorities to the people. We are also apt to think, further, that via such active diffusion of information populations become informed publics and that this transformation makes development programs bear fruit.

It is this kind of thinking that leads to a preference for electronic telecommunication media since such media are more capable than others of diffusing and transmitting information speedily and accurately over a wider range and are often cheaper on a per-target basis than others. The danger of basing a communication program on such technology is that the program can easily become a transmission-media program instead of a communication program.

Although information theory tells us that entropy on the receiving side should fall as highly developed communication media bring more information more quickly to the people, that is not the actual case. Often, as people find access to more information, their understanding of and involvement in the communication process deteriorates. This deterioration cannot be attributed solely to contradictions in the supplied information itself or to the low quality of information. It stems instead from the fact that some information-transmission systems using high-level technology are inherently incompatible with the structure and nature of people's

(Continued on page 7)

A publication of the Clearinghouse on Development Communication
Supported by the Development Support Bureau of the U.S. Agency for International Development

Like all theories, communication theory is changing and growing. Present interest in dialogue as a form of communication, for example, grows out of the recognition of the importance of egalitarian communication relationships in which participants in the communication process both give and receive information and in which all participants (including the "sender" or initiator of the dialogue) can expect to change.

In my view, planning is the application of theory to reality in order to reach decisions about what to do, when, and how. If this view is correct, then planners will have to have a reasonable command of various communication theories and will have to know how to use these theories effectively . . . which takes us to planning theory.

Planning Theory

Planning theorists seek to explain the process of planning. Put another way, the theory of planning helps planners decide how to organize themselves for effective action.

The several important varieties of planning theory are also changing and developing. Early theory, that most often at the base of national economic and development planning, is often called *rational-comprehensive*. A system with which most development planners are familiar in one form or another, rational-comprehensive theory incorporates situational and problem analysis, the setting of specific and measurable goals and objectives, the development of alternative strategies for action, the evaluation of alternatives, administrative-feasibility analysis, and operational planning. Common tools are cost-benefit analysis, feasibility studies, quantitative models of various kinds, forecasting techniques, systems analysis, PERT (Program Evaluation Review Technique), and so on.

Planning of this type rests on the assumption that the future can be predicted in considerable detail. It requires a great deal of data and even more faith in the technology of planning and the capabilities of planners. It also requires considerable formalized and centralized authority for implementation.

Rational-comprehensive planning has not led to notably successful development programs. It has come under considerable criticism because of its centralized, top-down authoritarian character. Thus, for pragmatic and ideological reasons, new theories of planning are emerging. Among the replacements are *innovative planning*, which emphasizes changes in the structure and capabilities of institutions so that problems may be solved, and blends planning with implementation. Another new option, *incremental planning*, is based on the notion of gradual change within relatively short periods, the extensive use of process-oriented feedback, learning from experience, and decentralization or localization of planning. *Participatory planning* emphasizes active roles for program clients in the planning process, while *radical planning* reflects the importance of learning from the process of identifying and solving problems.

These new planning theories can be combined. Like various communication theories, different planning theories are more or less useful in different contexts.

Development Theory

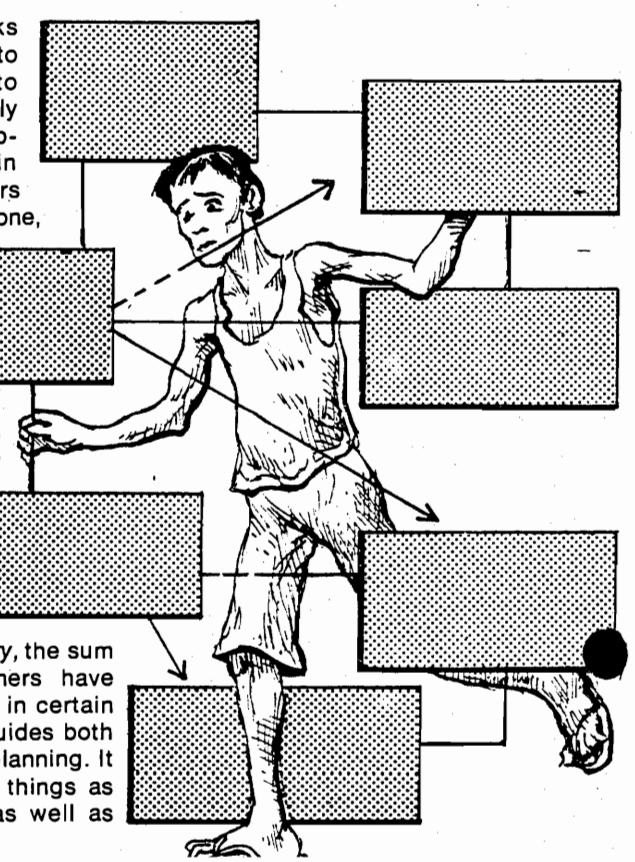
Development theory is also in flux. Economic-development theories that reflect the general goal of increasing production and consumption and that emphasize high levels of capital investment and technology, long time-frames, and the trickle-down of benefits are being abandoned as their negative effects become more widely understood. New theories of development stand as radical departures from this model. They emphasize quality of life as a goal and reflect a view of development that takes in more than increased GNP and consumption. They also take appropriate technology into account. Those who adopt these theories see the pernicious effects of the existing international system as causal factors in underdevelopment and are less ready than others to attribute failure to develop to "backwardness" or "resistance to change."

Development theory, like communication theory, is a theory in planning. To apply this theory is to set the framework within which planners identify problems and apply communication theories. In many ways, consciously or unconsciously, a planner's development theory serves as the touchstone for all professional action. It is at least partially bound to social, cultural, economic, political, and organizational contexts.

Experiential Theory

There is no shortage of books on how to communicate, how to achieve development, how to plan. At the same time, relatively few planning teams actually apply the rich resource of ideas in quite the way the theory-builders intended. And yet, things get done, often quite well. Individuals and groups make decisions, write plans, allocate resources, and manage programs — often in predictable ways. In fact, we can identify patterns in the planning that grows out of their accumulated experience in dealing with problems over time.

These patterns form what we might call *experiential theory*, the sum total of strategies that planners have evolved to cope with problems in certain contexts. Experiential theory guides both the process and substance of planning. It determines, for example, such things as who is involved in planning, as well as which media are chosen.



Experiential theory may turn out to be of considerable importance. At the very least, we should take stock of these theories before developing our own textbooks on communication planning since understanding experiential theory may enable us to utilize communication, planning, and development theory more wisely. Above all, this kind of theory can spark insights related to how communication planning can be done, or done better.

Conclusions

Even this brief review of theories in and of planning has important lessons for communication planners. First, we must accept the challenge posed by rapid change in various theory fields. Our research and development efforts must attempt to capture this movement and growth. Clearly, we should not base work in communication planning on theories that are being supplanted.

Second, the distinction between theories in planning and theories of planning can guide researchers and those who train planners. Effective communication planning will require (1) a thorough understanding of how theories of both kinds can be applied to the task of planning communication systems and activities and (2) trained planners competent in the use of both kinds of theories.

Third, critical to the effective use of theories for planning — a major goal — is the ability to select and combine theories to fit particular contexts. To choose theories and apply them effectively, planners will need to be familiar with a range of theories, be able to match them with different problems and contexts, and be equipped to analyze their own planning situation as a basis for theory choice.

Thus, in our initial work on communication planning, we might do well to develop "design" principles, which help planners choose and use theories. One such principle, for example, might help planners relate organizational structures and socio-cultural variables to different kinds of communication goals. Taken together, principles that cut across the theories of communication, development, experience, and planning may turn out to be a theory of communication planning.

A thorough grasp of experiential theories and their contexts could help planners link communication planning with new developments in theory fields, make practical use of the distinction between theories in planning and of planning, and develop principles for selecting and combining theories of various kinds. Grounded firmly in the reality of planning, research and development efforts will have a higher probability of being used. Steeped in experiential theory, they may be a rich source of original ideas as well.

■ *John Middleton, Assistant Director for Planning and Evaluation, East-West Center Communication Institute, Honolulu, Hawaii*

Knowledge (Continued)

production and of information-utilizing systems been emphasized.

Some recent research, conceptualization, and model-building does appear to hold up under some of the criticisms made of past systems. While nobody claims to have developed *the* system, a review of some of the ideas recent systems incorporate may trigger some new insights, provide communication planners with a modified framework within which to organize past communication and planning experiences, and sharpen the edges of the conceptualizations from which planners work.

A New Prototype

One such information system draws heavily on the work of Havelock, Guba and Clark, Rogers, Gideonse, and Rothman and Roling. This paradigm embraces six categories (or stages) of interrelated functions, activities, and processes that seem distinct enough to merit separate treatment. (For fuller details, see *Knowledge Production and Utilization: A General Model — Third Approximation* by Peter M. Meehan and George M. Beal, Sociology Report No. 138, Department of Sociology and Anthropology, July, 1977, Iowa State University, Ames, Iowa 50011.)

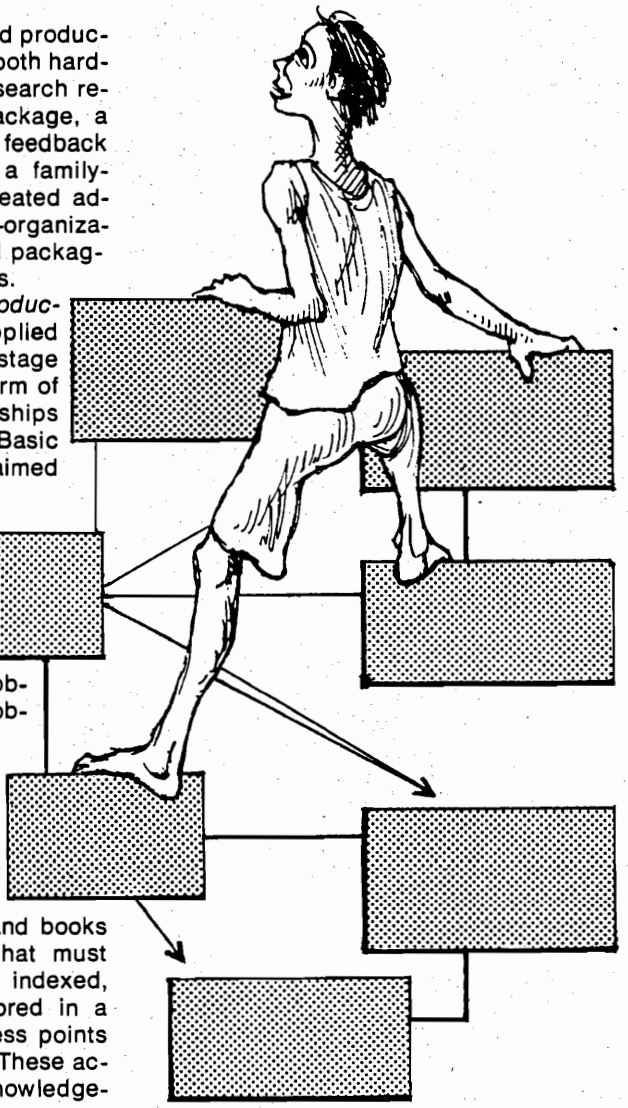
The linchpin of this paradigm is social interactive communication. Actors in each stage must meet the needs of users in other stages if the needs of the ultimate users (the target audience) are to be fulfilled. Each of the stages between research and adoption/utilization represents in miniature the whole process of knowledge production and utilization. In specific user needs, planning and producing needed products (including both hardware and such software as a research report, an information search package, a brochure, a radio program, a feedback procedure, a training module, a family-planning campaign, a newly created advisory committee, and an inter-organizational coordination council), and packaging them to appeal to the clients.

Stage One/The Scientific Production of Knowledge. Basic and applied research are carried out at this stage to produce knowledge in the form of verified statements of relationships between and among variables. (Basic research here means research aimed at producing knowledge for its own or discipline's sake, while applied research here means that aimed at solving "real world" problems.) The types of knowledge obtained from both kinds of research often prove necessary, but not always sufficient, to the solution of a given problem.

Stage Two/Knowledge Management. Stage-one activities result in a vast array of articles, reports, papers, monographs, and books presenting research findings that must next be monitored, screened, indexed, catalogued, packaged, and stored in a readily retrievable form at access points for later use and dissemination. These activities may be designated as knowledge-management.

Stage Three/Knowledge Translation. Knowledge translation involves the synthesis and conversion of research findings into information that product developers can use to solve practical problems. At this stage — one of the "meeting points" of abstract, scientific knowledge on the one hand and practical knowledge and client problems on the other — highly skilled translators or linkers with a dual understanding of the scientific and practical conceptions of the same problem code and recode the clients' formulation of a problem and relevant descriptors of available scientific knowledge. Scientific research is synthesized, generalized, and brought to bear on clients' problems. Effort at this stage may produce papers, reports, presentations, or consultations on guidelines and other information on product development.

Stage Four/Product Development. At the product-development stage, "translated" scientific knowledge is combined with knowledge of existing or created user needs, and products with the presumed potential to meet these needs are developed. The orientations to product development vary here. Sometimes the emphasis is upon discovering the needs and wants of target audiences and developing goods and services to meet these needs; in other cases, the product is developed



(Drawings by Tom Chalkley)

Product development of both software and hardware usually includes activities such as problem-formulating, determining the product function, developing performance and appeal specifications, inventing or designing alternative products, analyzing and assessing alternatives, selecting the best solution, designing prototypes, fabricating prototypes, testing and retesting prototypes, making and packaging marketable products, and transferring these packages to distributors.

Stage Five/Product-Dissemination. Once potential solutions to user needs or problems are developed, getting them to the clients becomes the goal. Activities at this stage usually include making sure the product and its uses are fully understood, designing dissemination and communication strategies, distributing the product, adapting and installing it, and monitoring product performance.

Stage Six/Product Adoption and Utilization. Product adoption and utilization is the process whereby users discover and diagnose problems, locate solutions, test solutions, adopt solutions, and effectively assimilate solutions.

If no answer to the need or problem is readily available, proponents of the model argue, that very lack will re-initiate a com-

Knowledge (Continued)

previously discussed steps. Eventually, adequate and appropriate knowledge is found, developed into a solution, packaged, and communicated back to the user for testing and possibly for adoption and utilization.

Implications of the Model

In the paradigm described above, knowledge production and utilization receives greater emphasis than research. It reflects the recognition that types of knowledge other than that developed and written by research scientists can contribute to problem-solving. It is posited on the belief that relevant knowledge can (and in some cases must) be provided by linkers, product developers, disseminators, and ultimate users.

This paradigm does not assume a one-way flow of knowledge from researchers to ultimate users. It is based upon the recognition that knowledge and communication move back and forth from one stage to the next, rather than flow smoothly from the beginning to the end of a utilization chain. Indeed, the often iterative process is marked by repetition and recurring action.

Finally, this model allows for the collaborative production and utilization of knowledge. Its use does not lead to relationships of dependency. Further, it facilitates the development of intermediate technology and appropriate technology while it fosters adaptive research and development, and user trials.

This paradigm is free of some of the flaws that rendered its predecessors of dubious worth — that much is clear. But the practical value of the paradigm has yet to be established. Can it provide background or otherwise serve communication planners? To this question, each planner must provide answers, even if doing so means sweeping away or revising some long-held, and therefore precious, mental images.

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Readers are invited to submit typed manuscripts of no more than 1000 words and to send in photographs.

Communication and the Global Economic Order

When we say the world has shrunk, we are talking in large part about recent fantastic advances in communication technology. Such innovations continue to affect the international economic system through their influence on trade flows, currency exchanges, and capital flows. In turn, these flows are generated or at least regulated by international organizations like the IMF, the World Bank, and the GATT; by regional customs unions like the EEC, the COMECON, and ASEAN; by multinational corporations; by cartels like OPEC, and by individuals with liquid resources.

Communication in Int'l Economics

The communication channels through which economic information flows are often maneuvered to give a special advantage to a particular country's trade balance and currency, as was the case in August of 1971 when the U.S. "untied" the dollar from gold and imposed a 10-percent surcharge on imports and again in 1973 when OPEC quadrupled oil prices. Information on these policy changes had been closely guarded, and the changes took the world by surprise.

When OPEC upped oil prices in 1973, trade and communication channels carried projections of oil supplies and prices so rapidly that oil-importing countries were quickly placed on the defensive. Telecommunication networks between major central banks helped Japan, West Germany, France, the U.K., and the U.S. forecast their oil import bills and formulate policies to combat the ensuing internal inflation. Meanwhile, oil-surplus funds gave a boost to the telecommunication industry, since international telephone, telex, and news-flow systems were kept buzzing with the latest consumer demands emerging from the Arab world.

In general, when international communications falter and when networks carry confused or self-contradictory information, currency crises arise and capital flows become erratic. Uncertainty grips governments and banks, and every rumor of devaluation of any of several major currencies leads to frenzied activity on "spot" and "forward" markets. In such cases, speculation by multinational corporations, resource-producing countries, and individuals has disastrous consequences on the balance of payments of Third World countries.

Int'l Communication & Development

Developing countries were the worst victims of the oil crisis and the currency upheavals. Not only did they lack resources to meet the rising cost of oil, but they faced rising prices of oil-based products, particularly fertilizers. Their economies simply lacked the resiliency needed to adjust to their growing trade deficits, and they received no help from existing international communication networks, which might have helped cushion the adverse effects of trade imbalances by presenting LDC goods and services as competitive with developed-country products.

Granted, international trade policies have gradually begun to dismantle tariff barriers and quota restrictions that operate against LDCs, to move away from major reliance on import-substitution, and to promote the LDCs' goal of industrialization — even though the flow of capital and technology has yet to change course. But these changes are not adequate. What is needed is the systematic exploration by LDCs of international export markets. For example, multinational advertising agencies already operating in Third World countries could be used at reasonable cost for tapping European, American, and Japanese markets. But, faced with widespread poverty, low productivity, and high unemployment, LDCs are not in a position to invest in telecommunication services to assist in their drive to increase exports and to get tariffs and other trade barriers removed.

Just as Third World countries need to explore developed-country markets for their primary products and manufactures, advanced countries need to get their technical information goods and services to LDCs. Since the information sectors of the industrialized countries have already reached saturation levels, exporting information products and technologies has become imperative. This saturation has reached crisis proportions and has spillover effects in developing countries, whose dilemma worsens as population-growth rates overtake the rate of capital formation.

Fortuitously, information systems are fast becoming more affordable. Computer-packet switching networks, for example, can be used to meet the needs of agricultural research centers, and multiple-access satellite systems like the U.N. AGRIS program can reduce service costs and give LDCs access to advanced technical-information bases. But the new international information order, which is being established to find answers to some of these problems, entails more than the transfer or creation of new information systems and must be considered the co-equal of the new international economic order.

The New International Economic Order

The essentials of the new international economic order are non-reciprocal preferential treatment of LDC exports, limitations on the scope of the activities of multinational corporations in developing countries, generation of reliable ways to transfer appropriate technology, and a reduction in the burden of debt-servicing. These policies are not new nor inconsistent with existing trends in world trade, though collective bargaining by the Third World is.

THE JOKER IS WILD!

These playing cards — one of many innovative teaching aids developed by Zahia Marzouk, Vice President of the Family Planning Association of Alexandria, Egypt — are used to impart basic literacy skills and to spread the family-planning message at the same time.

Suits are organized by sounds, numbers have been replaced by familiar objects (vegetables, clothing, etc.), and the jokers bear pictorial representations of contraception.

Women learn to play several traditional card games with these untraditional decks and take the cards home to teach the novel literacy games to their neighbors, husbands, and children.

If the new international economic order is to become a fact, then LDCs have to express their needs for a two-way flow of information goods and services, as well as of industrial goods and raw materials. Advances in communication systems will not only enable them to improve their health services, education services, and agricultural productivity, but will also help them to organize regional trade blocs and thereby increase their bargaining strength and the potential for a freer flow of goods. Under this new dispensation, the use of sophisticated communication hardware and software could reduce the probability of conflict and confrontation by making international communication faster and clearer.

The World Information Order

The convergence of the economic order and the information order — or more broadly, a communication order — occurs at the level of technology transfer and the investment it entails. In the realm of politics, a new worldwide communication order could reduce international tensions. After all, communication has been described as the key factor in solving world problems of hunger, poverty, disarmament, and peace-keeping.

The needs of different countries for communication systems vary, but essentially the free flow of information goods and information services is as vital as the free flow of industrial goods and services. Indeed, the output of the manufacturing sector depends upon communication research and design, business machines, legal services, accounting and managerial services, and other information goods and products — the use of which adds to the costs of non-information goods. In a wider context, information systems provide the basis for capital accumulation, since this accumulation is highly dependent upon effective and efficient information flows.

Convergence and Synthesis

Since in both the new international economic order and the new international communication order the need is for an even flow, a critical problem is the communication gap between the economist and the communication scientist, both of whom are interested in helping the Third World.

Common ground is not the problem. Both product flows and information flows are subject to the processes of production, exchange, and distribution. Both information and non-information goods are subject to opportunity-cost considerations and to investment analysis. And optimizing investment in either sector requires a full understanding of when and how technology transfers and of how economies of scale affect unit costs.

The two orders need to be envisaged as an integrated whole, instead of as isolated operations. If they were, Third World countries haunted by fears of technological domination by the industrialized world could relax their suspicions, and international relations would likely become more stable.

In the ultimate analysis, integrating the two orders will entail collaborative planning by international organizations and policy-makers at the national level. Their task will be to frame coordinated agreements for balanced trade and communication flows.

■ *Meheroo Jussawalla, East-West Communication Institute, Honolulu*

Planning for LDC Women

Four recently published documents offer project planners broad guidelines on how to identify and help meet the social and economic needs of Third World women. *(DCR's* editor welcomes accounts of fruitful or failed attempts to implement such guidelines at the project level.)

"Guidelines for the Integration of Women in Agricultural and Rural Development Projects," Document No. W/K6542, FAO, Rome, May 1977.

"Appendix Q" in *Communications Technology for Development: Guidelines for Consultants Working with the Agency for International Development,* Howard Leavitt and Peter Boynton, Academy for Educational Development, December 1976.

Peace Corps Program & Training Journal, Vol. IV, No. 6, 1977.

"Guidelines on the Integration of Women into Development," Document G3100-1, Programme Policy and Evaluation Division, UNDP, New York, February 1977.

CDC Publications

Copies of the following back issues of *Development Communication Report* and its forerunner, *Instructional Technology Report,* are available at no cost from the Clearinghouse:

No. 22. "To and From the Field: Communications and Agriculture," April 1978.

No. 21. "Reconsidering Print," January 1978.

No. 20. "The Nutrition Message & The Mass Media," September 1977.

No. 19. "Communications & Development: Two Views," June 1977.

No. 18. "Mobilizing Media for Development: A Question of Will," April 1977.

No. 17. "Telemedicine: Health Care for Isolated Areas," January 1977.

No. 16. "Communication and Integrated Rural Development," October 1976.

No. 15. "Health Education By Open Broadcast," July 1976.

No. 14. "Film in Development," April 1976.

No. 13. "Uncomfortable Issues in Instructional Technology," January 1976.

No. 12. "Folk Media in Development," September 1976.

No. 11. "Perspectives on Educational Technology," June 1975.

No. 10. "Technology and Educational Reform: The Case of Ivory Coast (Part 2)," January 1975.

No. 9. "Technology and Educational Reform: The Case of Ivory Coast (Part 1)," October 1974.

No. 8. "Technology is the Answer . . . But What Was the Question?" July-August 1974.

PLANNING DEVELOPMENT-COMMUNICATION SOFTWARE

LESSONS FROM SITE

In June 1976, a joint Indian Space Research Organization-National Aeronautics and Space Administration study found that a terrestrial-cum-satellite TV system would be the most cost-effective television system for India. A one-year long pilot project was proposed to provide insights on the configuration of such a TV system, its software, hardware, management, and costs. This was the SITE project, the Satellite Instructional TV Experiment, conducted in 2,338 villages in India from August 1975 to July 1976, using a NASA satellite.

The primary responsibility for message-making was with the specially set up TV Satellite Wing in AIR (All India Radio), in the Ministry of Information and Broadcasting. With only two years to the first day of transmission, this Wing had a lone Director, one typist, no budget and no staff — and a 1,300-odd hours transmission requirement for August 1975-July 1976! In July 1974, three studios came up.

The systems analysts and the specially-recruited summative evaluators felt that empirical data on village conditions, rather than only the opinions of overworked experts in government secretariats far from the village, should determine the objectives and curriculum. But whose job was it to prepare these? Shouldn't each development agency that wanted broadcasting support do its own study of communication needs in the villages, define instructional goals, and specify a content plan for each program that the creative genius of the broadcasters could then flesh out? A series of meetings was held at state and central government capitals, at which experts drew up a "list of topics" for the programming organization. Participants did try to supply scripts as often as they could, some ministries doing better than others, but coordinated scheduling of activities was always a problem in an inter-ministerial undertaking in which each agency had different priorities.

So, the summative evaluators in the space agency (which was located over a 1,000 miles from the producers), with academic training in anthropology, sociology, psychology and communications — who had never heard of terms like "formative evaluation" — decided they would try to provide TV producers with a picture of village life, village needs, and villagers' reactions to some pilot programs, and with input evaluation data. All this was to be in addition to the "product" evaluation they were hired to do, on which they were already behind schedule and understaffed.

Context evaluation provided profiles of life at the village level and an assessment of needs in the SITE instructional areas. Audience profiles were based on ethnographic data collection and secondary sources, and presented non-technical generalized pictures of dialects spoken, food habits, dress, religion and ritual, and a typical working day. The producers reactions were that the reports were "too simple."

Needs were assessed by interviewing district, block, and village-level officials in agriculture, health, and education, since there was no time to study the villagers' perceptions directly. It was realized that there were big differences in the villagers' and officials' opinions, particularly on the causes of problems (one open-ended exploration of programming suggests that the content of the reports was not used). Of uneven quality, these assessments too were first attempts like many other things in SITE. Apart from being written documents, they came when producers were busy canning programs — when the time for planning content and formats had passed.

Input evaluation was supposed to consist of testing of the prototype programs in the village. With each producer canning one feature-length production a month from the word "Go," there were no specially designed prototypes to test. Whatever was made first was tested, and thus one of the two sessions proposed per state was completed. This was in the face of monstrous problems in obtaining portable VTRs for village playback and of engineers' reluctance to let studio equipment face dust storms, heat, and the Monsoon rains.

It was hoped that the findings from the audience profiles and the needs assessment would, along with the expertise from the specialists, help software planners define precise goals. The pretesting was to help finalize persuasive appeals and forms. But SITE software had gotten organized too late.

The marvellous thing about the SITE software project was not last-minute attempts at formative research or the fact that no formative research was planned. The miracle is that there was a passable program ready to go on the air every day for four hours a day!

With so many SITE scars to learn from, it is little wonder that the one-time summative evaluators in the space agency actively advocated basing full-time formative researchers in each development-TV studio in the SITE Continuity Phase (1976-79). At least ten other lessons can be learned from SITE, too:

1. Budget adequate time to breathe, to do formative research, and to produce materials and programs without going crazy.

2. Recruit artists, producers, and writers who are committed to the Development Cause rather than to art for its own sake.

3. Recruit researchers who are dedicated to the Development Cause rather than those who are monogamously wedded to Science for their own sakes, to research methodology for Fear's sake, and to publishing in academic journals for Increments' and Promotion's sake.

4. Recruit researchers who have a feel for the strengths and limitations of the medium used, be it chalk or the TV camera.

5. Recruit researchers who are sensitive interpersonal communicators and who can link the subject specialist, artist, and audience in order to develop a good "instructional design."

6. Recruit producers and researchers who are excited about creating a new method of collaborative *program development.*

7. Make sure that top organizers are in full and honest agreement on the superiority of the team method, and support it wholeheartedly despite deadlines and protests from both researchers and producers.

8. Be certain that you have a utilization plan and have a utilization staff in the field to follow up with post-program activities.

9. Remember that no single method of formative research is appropriate for all goals, all audiences, all media, all cultures, and all times. Local combinations and methods, be they quick and dirty, must be designed for local needs.

10. Be patient. Even if first attempts at formative research are not reflected in programming quality in the beginning, they could determine the shape of the fully evolved system, as they did in SITE.

■ *Bella Mody, Stanford Institute for Communication Research*

On File at ERIC

Recent entries in the ERIC (Educational Resources Information Center) files include reports from two satellite television projects, one in India and one in northern Canada, and two guides for instructors in the field of broadcasting.

- Chander, Romesh and Kiran Karnik. *Planning for Satellite Broadcasting: The Instructional Television Experiment*. Paris: UNESCO, 1976, 72 p. (ED 146 898).

  This document covers the technical and programmatic planning stages of the Satellite Instructional Television Experiment (SITE), which was undertaken by India in 1975-76 and which utilized the first satellite capable of transmitting television programs directly to community receivers. Programmatic planning includes identifying program objectives, mastering the mechanics of programming, choosing content for adults and children, developing a multi-media package for in-service teacher training, and determining priorities in education, agriculture, health, nutrition, and population control. Technical planning includes village selection, the direct reception system, and evaluation. Extensive inter-disciplinary cooperation was demanded by the nature of the project. Available from UNIPUB, Box 433, Murray Hill Station, New York, NY 10016 for $2.65; available from EDRS in microfiche only for 83¢ plus postage.

- Coldevin, Gary O. *Development Effects of Television Via Satellite on Canadian Inuit Heads of Household*. 1977, 97 p. (ED 142 182).

  This research is concerned with the impact of television in an area where the majority of native adults originally had a limited understanding of the language or conventions of the medium. Responses to an open-ended questionnaire are compared with responses to the same questionnaire as administered 18 months earlier when the satellite broadcasting system was initiated in northern Quebec. Results indicate that 98 percent of the respondents have access to a television set and watch up to 7.4 hours a day; that favorite programs include such dramatic series as *Cannon* and *Police Story* and that the least favorite are "public affairs" shows; that radio listening has declined severely and newspaper reading increased slightly; that respondents felt television kept the children home and the family together; that respondents had gained a clearer understanding of international and national issues from TV; that children have developed aspirations for higher social and economic status; and that TV is nevertheless irrelevant to people's deep-rooted customs and environment. This study supports calls for programming relevant to viewers' lifestyles, culture, and language, and for the development of production centers in the north. The questionnaire and numerical responses to both surveys are included. Available from EDRS in microfiche for 83¢ or photocopy for $4.67, both prices plus postage.

- Deance, F.R. *Broadcast Training Techniques*. Paris: UNESCO, 1976, 122 p. (ED 132 635).

  This volume provides theory and guidelines for training in the field of broadcasting. It attempts to bridge the gap between knowledge of a subject area (whether it be production, technical matters, or creative writing) and the communication of that subject to others. Chapters address general aspects of training and instruction, the principles of learning, the instructor's qualities and role, course development, development of instruction, methods of instruction, the learning environment, and feedback. Available from UNESCO Press, 7 Place de Fontenoy, 75700 Paris, France. Not available from EDRS.

- Makridakis, Spyros. *The Management of Communication Resources. A Guidebook for Course Directors*. Paris: UNESCO, 1976, 116 p. (ED 142 193).

  This guidebook is designed to introduce management training into UNESCO's regional communication programs. The course material is intended for actual or potential managers of broadcasting and communication organizations. It presents relevant business-management concepts, methods, and practices. Addressed to trainers of communication managers, the manual contains a discussion on training methodologies; data for innovative course designing; and resources for study materials, supplementary texts, and educational aids. It can also be used for self-instruction, though the teacherless learner will be at a disadvantage in some course areas. The first of the two sets of courses is a four-week course in general management for middle managers. The second group is a set of one-week courses in specialized areas for those in middle and upper management positions. Available from EDRS in microfiche only for $.83.

Documents available from EDRS can be ordered from ERIC Document Reproduction Center, P.O. Box 190, Arlington, VA 22210. Order by ED number and enclose payment for the price plus postage. For information about ERIC, indexes to ERIC documents, and other services, write ERIC Clearinghouse on Information Resources, School of Education, Syracuse University, Syracuse, New York 13210.

■ **Barbara B. Minor, Publications Coordinator, ERIC Clearinghouse on Information Resources**

Regional Planning (Continued)

everyday communication processes, which in most developing countries are person-to-person.

As the media become more complicated and more efficient, the information they transmit becomes less personalized. And when transmission of depersonalized information increases one-sidedly, one of two things happens. Members of the target audience may begin to demand the right to respond to the information supplied — not merely to ask questions but also to refute the messages presented, present opposing views, and initiate new messages from their side. The more negative and more likely outcome, however, is that they will simply disregard the messages and retreat into skepticism.

While not necessarily easier to perceive at the regional level, the problems of disaffection and skepticism are both more acute and more amenable to solution at the regional level than at the national level. Naturally, people are more skeptical of development directives that central authorities issue on regional problems than of centrally disseminated messages related to national problems: they are often in a better position than centralized authorities to assess regional problems and the validity of proposed answers to them.

Given the foregoing, two points on planning the communication system of the regional-level development program need to be made. The first is that the meaning and role of communication within the program need to be analyzed with greater care. If the role is merely to transmit messages, for example, just how the information fits into the process of people's social communication must be studied in advance of project implementation. In this case, how far transmission of depersonalized information mediated under the mechanical system will fit into the communication life of the people of the region must be determined.

The second point is that, during the design stage, the target audience's doubts, dissatisfaction, and possible rejection of the information supplied or of the supplying system itself should be anticipated, and the program should be planned accordingly. Doing this will require surveying with utmost care the scale, structure, and nature of the communication activity of the people of a region — both before and after a new system is introduced.

If a problem now afoot in the industrialized nations is to be avoided, people's awareness of their own participation in the communication-media system needs to be raised and monitored, and flexible principles for formulating a system matched to social realities need to be devised. The alternative is living with entrenched skepticism among viewers and listeners.

■ *Kazuhiko Goto, Senior Researcher, Japan Broadcasting Corporation (NHK)*

A Communicator's Checklist

1 Jean Marie Ackermann, media editor of *International Development Review,* pays to the language of film criticism the kind of rapt attention that is required if that language is not to become confused with the language (or "grammar") of the film itself. Her own prose kicks up dust but does not give the impression of having been written on horseback. Yet, a bit paradoxically, it actually bears some relation to the best films on development — which tend to do the same thing.

Ackermann wrote only six of the twenty essays in *Films of a Changing World — A Critical International Guide, Vol. II,* but the stamp of her judgment and her editing is upon all. Taken as a whole, the collection treats films as cultural artifacts, personal statements, technical achievements, politicizing tools, works of art, and sources of information. In the volume's preface, Ackermann begs *IDR's* editor for continued indulgence as a traveler on a "somewhat exotic byway in the [journal's] pages," but in view of the breadth of interest the essays exhibit, the remark comes off as a private joke.

Not every essay approaches film from all these angles. The well-rounded effect of the whole set stems instead from cross-references provided in Ackermann's prefaces and from a spirit of debate that the editor seems to look for when she picks articles for publication. Beyond this, many contributors have themselves had some filmmaking experience (a virtual guarantee that they won't write about film as a one-dimensional entity) and fully half of them live in the Third World (a fair indication that their perspectives on development have grounds in fact).

For every consensus in this book, expect a head-on collision. The essayists seem to agree at least tacitly, for instance, that a director has no more right to assume anonymity than to make a home movie in the name of development: both approaches are subversive because they are irresponsible. On particular films and filmmakers, though, opinions differ wildly. (For sport, compare film scholar Carrie Sembene's assessment of her husband Sembene Ousmane's work as "denouncing existing ills in his society" and dedicated to "social realism" with Bennetta Jules-Rosette's contention that Sembene's film *Mandabi* presents "a theatrical version of tradition and change that represents daily life in Africa much as American television situation comedies reflect the American social milieu.") Perhaps this kind of intellectual orbiting merely reflects the truism that principles are less amenable than tastes to attack. But a more positive construction is that development filmmakers have not yet become hidebound, have not yet mummified principles into formulas.

The only complaints about this volume that don't sound peevish are related. One is that the contributors' credentials (though seldom their ideas) tend to be hardline academic — more otherworldly than Third Worldly. The other is that too many essays focus on films that few will ever have a chance to see. Ackermann repeatedly laments this last fact and makes what amends she can by way of giving information on costs and availability. Then too, criticism itself ostensibly affords one means of bringing good films out of the closet. But the problem remains and makes the practical reader uneasy.

Full use of this book awaits free access and full use of the films discussed. But had Ackermann waited for more equitable film-pricing practices and film-distribution policies, the "baby" of development filmmaking would have suffered incalculable and unrecoupable losses for want of an important formative stimulus.

Films of a Changing World: A Critical International Guide, Vol. II, can be purchased from the Society for International Development, 1346 Connecticut Avenue, N.W., Washington, D.C. 20036, U.S.A. for U.S. $4.00. ■ *K.C.*

2 Suzanne Kindervatter's manual, *Learner-Centered Training for Learner-Centered Programs,* is useful to workshop planners interested in increasing learner participation in structured training activities. The author describes in detail an approach for applying learner-centered training techniques to a specific adult-training situation in Thailand. Emphasis is placed upon the processes used to involve participants actively in workshop planning and implementation. Issues such as sharing leadership, learning by doing, problem-posing rather than problem-solving, and developing materials-production skills are treated. Descriptions of human relations exercises that have been adapted creatively to meet Thai cultural needs are presented.

Most of the text describes in detail the workshop operation; but a thought-provoking introductory section puts forth the notion that while Thai culture may seem ill-suited to participatory learning activities, in fact a deeper analysis of Thai, and indeed Asian, values indicates that Western learner-centered approaches such as Freirean processes do find expression in Thai culture through such concepts as "khit pen" (which can be translated as critical or rational thinking). Unfortunately, this contention is not linked to the description of the workshop activities. The reader is left without guidance on how "khit pen" and critical consciousness are related.

Also misleading to individuals who know Freire's work in another context is the author's use of Freirean terminology to describe various phases of the workshop. Moreover, readers find out little about who participated, how participants were selected, or what happened after the training. A final flaw is the lack of evaluation evidence, which weakens the author's case for learner-centered approaches.

Those seeking ways to adapt traditional human relations techniques to different cultural settings and different educational goals will find this manual a useful reference. The workshop design and structure are sound, and the presentation is logical and coherent. If somewhat flawed as a "think piece," Kindervatter's work is most helpful as a checklist of workshop design concerns for learner-centered practitioners.

Learner-Centered Training for Learner-Centered Programs is available for $3.00 from the Center for International Education, University of Massachusetts, Amherst, Massachusetts 01002, U.S.A. ■ *W.S.*

3 This 50-page booklet, "Audio Cassettes: The User Medium" by Sumanta Banergee, contains a brief history of the development of audio cassette technology, advice on operation and production, and a summary of a variety of developmental applications of cassettes. The monograph provides a useful overview of cassette uses and of the medium's particular advantages with respect to local production, feedback, and audience participation. Examples from Jamaica, Guatemala, the Philippines, Pakistan, East Africa, India and Ecuador are cited.

Emphasis falls squarely on the use of cassettes in the field. More particularly, cassettes are now the basic tool of the radio reporter, according to Banergee, and have expanded greatly the possibilities of producing broadcast-quality programming in the field. This is particularly important in view of the logistical problems of duplicating and distributing multiple copies of cassettes.

One of the series of UNESCO Monographs on Communication Technology and Utilization, "Audio Cassettes: The User Medium" can be obtained for U.S. $3.00 from UNESCO, 7 Place de Fontenoy, 75007, Paris, France.

■ *Heather Hudson, Academy for Educational Development*

4 Sources of information are among the most prized possessions of persons involved in technology transfer. The Development Reference Service of the Society for International Development (SID-DRS) has produced a sourcebook that will surely occupy a favored reference spot on many shelves. *Information Sources for Development* is a commendable effort to identify the elements of what is called the "primary information network." The "bodies" listed in the sourcebook have "agreed to answer requests for documentation or information submitted by *developing countries* [ital. mine], or on their behalf, without charging any fees."

By dividing the network into various sectors such as international, national, regional, and specialized institutions, the SID-DRS places emphasis on the open-ended aspect of this network, which they underscore by appealing for further sources of information. SID-DRS's intent is to foster a network within and for Third World countries, so Sources, make yourselves known to them!

Information Sources for Development (in English and French) may be obtained from the Society for International Development, Development Reference Service, 49 rue de la Glaciere, 75013 Paris, France. ■ *J.B.*

5 The East-West Culture Learning Institute at the East-West Center takes seriously its responsibility for examining the many facets of cross-culturalism. Representative of this continuing effort is the latest volume (number 5) in the series, *Topics in Culture Learning,* which is divided into one group of articles contributed by participants in the culture-learning process, and another that documents research in the field.

The wide variety of topics covered underscores the interdisciplinary approach now considered necessary to the cross-cultural social scientist. Problems of teaching, linguistics, historical imperialism, economic deprivation, and psychology are among those reviewed. Several articles discuss designing cross-cultural research projects and stress the value of coordinated international cooperation and collaboration despite severe budgetary restraints. While most of the articles are specifically oriented toward academia, several of them cross the academic-culture barrier to give the layman insights into such things as a Pacific journey using star compass navigation skills, American popular culture under cross-cultural attack, and the process whereby adult Israeli immigrants absorb each others' cultural pasts while together learning their way in a new cultural present.

Topics in Culture Learning (Volume 5, 1977) can be obtained from the East-West Center, East-West Culture Learning Institute, 1777 East-West Road, Honolulu, Hawaii 96848, U.S.A. ■ *J.B.*

6 In *Third World Mass Media and Their Search for Identity,* media analyst John Lent does for development communications something like what Martin Luther did for 16th-century Christianity. He publishes a list of grievances intended to be life-giving to the institution he cares most about. Lent's notions of reform are an academic's and his "articles" seem a bit rambling, but his heart is unquestionably in his work.

Lent takes as his twofold task the accumulation of data on the mass media in the Commonwealth Caribbean and the rangy analysis of that data in support of some self-evident truths and some speculation. His findings hold good to some extent for the whole developing world, he says, since the Commonwealth is fairly representative of other developing nations. On this count he may be right — but only in the sense that Cuba can be considered representative of communist countries, for to ignore what it means to have the United States next door is practically to hoist the "flat earth" banner. Lent almost harps on the subject of U.S. influence, though, so his argument merely wobbles where it might be expected to collapse.

What fascinates and annoys Lent is how far the Caribbean Commonwealth has been from the concerns of most communication analysts considering how close it lies to the world's biggest media laboratory, the United States. "Why," Lent lets fall in a line that only seems mock-serious, "have scholars not ventured into the study of the communicative capabilities of calypso, steeldrum bands, and political meetings?" Why, indeed? For those who doubt that finger-snapping tunes can spark social change or that calypso lives up to Trinidadian writer V.S. Naipaul's claim that it is "the ballad, the broadsheet, the *Punch,* and *New Yorker"* of his country, Lent offers this excerpted evidence from "Dan the Man," written in 1963 by the "Mighty Sparrow":

De lessons and de poems dey write an' send from England
Impress me they were trying to cultivate comedians.
Comic books make more sense,
You know it is fictitious without pretense,
C.O. Cutteridge wanted to keep me in ignorance.

His point made, Lent himself does not, however, devote much energy to the exegesis of comic books or calypso — much less to the *reggae* songs that have found such a steadfast following outside of Jamaica. In the long run, Lent's ear for music is less developed than his nose for news. His first love is journalism.

About print and broadcast journalism in the Commonwealth Caribbean, we learn from Lent some startling facts. The British West Indies didn't know local programming until 1934, when some impassioned cricket fans turned into sports commentators for an important match. Of the four major news agencies covering the Commonwealth, only Reuters operates its Caribbean Desk in the Caribbean. In Jamaica, local TV programs cost twenty times as much to produce as imported material does to run. Most island governments issue work permits to right-thinking journalists only and revoke necessary credentials to express displeasure. Sixty to 80 percent of all TV fare aired in the islands is foreign-made.

Statements like these and pages of documents and interviews coalesce into a familiar pattern with a double identity. The first resemblance is one that Lent might be stretching in his title, the story of media development in poor countries everywhere. To be sure, with the axes and cankers of government interference and without a lingua franca and adequate training and production facilities, the Caribbean looks for all the world like a microcosm of Third World media development.

But the Caribbean is also an exceptional case. Besides proximity to the U.S., an accurate picture of the Caribbean Commonwealth must show (as Lent's does) that some of the region's communication problems are peculiar to nations composed of islands. It must also show (as Lent's does) that the urban flavor of developing-world media content does not pose insuperable problems in the Caribbean, where the rural/urban distinction means little.

So, the analogy that matters ultimately is that between the Caribbean's own history as a colonized region and its present status as a force-fed consumer of foreign media products. Whether or not the specific charge of "media imperialism" is hurled and whether or not enslavement to a TV or radio set is comparable to colonial subjugation, all the factors that have made Caribbean politics a politics of crisis and celebrity rule, of bullying and foreign intervention, remain. And all are influencing the course of media development in the region.

Obviously distressed by the Caribbean media's need for help from foreign professionals and responsible local governments, Lent nevertheless manages to deliver full evidence and to approach the question of media sovereignty from several angles. Sometimes his logic does not match his concern, and sometimes his habit of relegating the latest and liveliest information to cumbrous footnotes tries patience. But Lent gets exercised only over the issues that really matter, seldom strays off course, and strikes a happy balance between anecdotal portraiture and systematic criticism. If his book does not itself work necessary changes in the evolution of communications, it is at least apt to beget others of its kind that eventually might.

Third World Mass Media and Their Search for Modernity is an Associated University Presses publication. It can be obtained for U.S. $22.50 from AUP, Cranbury, New Jersey 08512 or AUP, Magalen House, 136-148 Tooley Street, London SE1-2TT, England. ■ *K.C.*

Call For Copy

DCR's editor invites readers to submit case studies on communication projects and analytical or descriptive articles on topics of general interest to *DCR* readers. Particularly welcome are unpublished manuscripts on innovative literacy efforts, development-communication projects in urban settings, project evaluation criteria and techniques, the role of the interpersonal communicator in communication and education projects, community development programs, and health-information campaigns. Photographs and samples of learning aids will also be gratefully accepted. ■

FAO's YEARS IN RURAL DEVELOPMENT COMMUNICATION

FAO's experience with rural broadcasting goes back many years, but the organization's broader-based activities in development support communication began only in 1970 with the establishment, in that year, of a Development Support Communication Branch in the Information Division. From its inception, the Branch concentrated on action-oriented field programs, involving mainly illiterate or semi-literate rural audiences.

Some of FAO's experience may interest others engaged in practical communication work in the Third World. Since rural broadcasting was FAO's first sphere of development communication activity, let us begin there.

Rural Broadcasting

FAO has assisted numerous governments in projects designed to establish or to improve the quality of rural broadcasting. Benin, Togo, Central African Republic, Bangladesh, Laos, Afghanistan, Mauritania, and People's Republic of Congo are among the countries assisted. If we try to identify the overall lessons learned from those projects, several salient points emerge. First, in the past, too much emphasis was placed upon radio as a *teaching* medium. Carried away with optimism generated by radio's ability to reach the remotest corner of almost every developing country, we all — governments and FAO — expected too much from it. We now know clearly that radio can be a vital support for development activities, especially as a means of arousing interest about innovations among rural populations and of motivating them to seek further information. But FAO now discourages project proposals based on the precept that radio can fulfill the primary functions of an extension service.

Experience has proven the utility of radio as a means of horizontal communication among rural communities, provided that the program producers concentrate on recording and broadcasting material about local problems and successful solutions, and provided that this material is recounted by the rural people themselves. But herein lies a major problem: it is difficult to promote such a model of people-based broadcasting if broadcasters from Third World countries continue to receive their training in formalized, studio-based broadcasting operations in the industrialized countries, and if developing-country governments view radio and other mass media mainly as organs of manipulative propaganda.

With regard to organized listening clubs, we have for the most part abandoned the rather rigid "radio farm forum" approach. The boom in transistor radios has completely changed the pattern of radio ownership in most countries; and where radio ownership is still low, we prefer to promote collective listening in existing groups (such as cooperatives or farmers' associations) rather than establish a new series of listening clubs that, in our view, often become elitist.

Cassette Tapes

In countries with a single national broadcasting organization — usually the case where the French or the British influenced matters — the problem of topicality arises when broadcasting agricultural subject matter. Agricultural and ecological/climatic conditions are seldom homogeneous enough to allow a nationally aired message — for example, that it is time to apply nitrogen top dressing to wheat — to be timely and relevant to more than a small proportion of farmers.

In particular, this problem plagued an FAO-assisted project in Afghanistan. Consequently, a pilot experiment with pre-recorded cassette tapes was launched as a means of localizing information. Taped programs (on five topics of known interest to farmers) and cassette recorders were supplied to extension workers trained by FAO to lead discussions based on the taped material. A baseline survey and a second survey after a three-month experiment in two provinces showed that awareness of the five problems covered, and knowledge of their solutions, had increased from three to seven times. These results were so encouraging that FAO is now promoting pre-recorded cassette tapes as a useful, cheap, and reliable medium for use where a national broadcasting network without local stations makes topicality a problem.

Filmstrips

Another low cost medium FAO considers worthy of particular attention is the filmstrip or slideset. The advent of relatively cheap projectors that can be run off main electricity supplies or off a 12-volt car battery make the slideset or flimstrip an invaluable audio-visual medium for field use. This equipment is especially useful when accompanied by a printed booklet containing reproductions of the photographs of the strip or slideset and the narration for each frame. Such booklets become manuals in their own right and, provided the photographs are printed large enough, an extensionist can sit down with three or four farmers and go through a booklet with them should it be impossible to organize a projection.

In FAO's experience, two problems have emerged in connection with filmstrips. The first is getting the strips and the projectors to the people who can effectively use them and providing such people with the necessary training. The second problem is that, although FAO's production of filmstrips is meant to be a catalyst in getting similar production under way by Third World governments, the catalytic effect we aim for is seldom achieved.

The distribution and training program is basically internal to national administrations. But time and perseverance are working in our behalf. The extension and training success being achieved by projects that systematically use tailor-made filmstrips will have its impact; and, perhaps, the projectors and filmstrips gathering dust in carefully locked drawers in many parts of the world will be recognized as useful and brought into action.

The problem of filmstrip production by governments of developing countries ca[n] almost certainly be overcome with mo[re] in-service training. FAO thus routinely endeavors to involve national staff when filmstrips are being produced for use by FAO-assisted projects, but an even greater training effort is certainly required.

Cine-Film and Video

Apprised of some of the problems encountered with filmstrips, the reader will not require much imagination to realize how much greater the problems are with cine-film. The time required to make films, high costs, and the medium's lack of flexibility all militate against its use (except in rare circumstances). And as for the mobile film-projection units so often built into projects as a communication panacea by planners who give no thought as to which films will be projected, we find such vans expensive to buy, costly to run, and likely to break down before long. Commonly, such units lie idle or get used for general transportation more than they get used for their intended purposes.

Small-gauge video, on the other hand, is proving highly successful in farmer training under the agrarian reform program in Peru. After a slow start, a team of you[ng] Peruvians helped by three FAO speci[al]ists is now making videotaped programs on many aspects of agricultural production and taking the shows out to farmers. The VTRs and monitors are quite frequently carried in a rucksack or on the back of a horse or mule to heretofore inaccessible communities. So much in demand are the videotaped training courses (backed up by practical training, instructors' notes, pupils' guides, and evaluation questionnaires) that some cooperatives have offered to pay to have more of them. Video equipment is also being used by the same team in Peru for social research. Obviously, video is not a medium we would recommend in all developing countries, but the Peruvian experience bodes well.

Postscript

It is often said the success of technical assistance projects depends on the government support they receive. This is especially true for development communication projects. FAO's experience indicates that effective communication can only be carried out by nationals among their fellow countrymen — perhaps with external assistance in training, planning and policy, procuring equipment, etc. It also pointedly suggests that worthwhile achievements have been wrought only when governments have made available good national staff and have maintained the strong interest shown when the original project was requested.

■ *Colin Fraser, Chief, DSC Branch, FAO, Rome*

What Extension Educators and The Mass Media Can and Can't Do — A Nutrition Education Project in India

In 1977 and early 1978, CARE's office in Tamil Nadu, South India, developed a mass media communication package addressed to slum women. Under the Modified Special Nutrition Program administered by the Social Welfare Department and CARE, supplementary nutritional and medical services were to be given to about forty thousand women and children through specially set up Child Welfare Centers in Madras, Coimbatore, Madurai, and Pudukittai.

The Intervention

As part of this program, a take-home ration of 700 grams of uncooked balahar (comparable to fortified semolina) is given to each beneficiary under six years old whose parents have accepted family planning or have fewer than three children. Pregnant and lactating women are also enrolled in the program, as are other women motivated to limit their family's size.

CARE trained and employed 48 female extension educators in conjunction with this project. Themselves slum women with but a modicum of education, these married mothers turned social change agents were versed in the rudiments of nutrition, health, and child-care. The work cut out for them consisted largely of motivating mothers to bring themselves and their children to the centers to receive the food supplement and medical care. These young project workers learned how to conduct cooking demonstrations using the food supplement and other locally available, cheap, and nutritious foods. They were also trained to organize women's meetings at which topics of community interest were discussed.

The mass media package was specially designed to help the interpersonal communicator reinforce her message and regulate and control message delivery. It is aimed at illiterate or semiliterate female slum-dwellers with strong beliefs about foods, pregnancy, and illness.

Never forgetting the low socioeconomic status of the target group and the restraints this status places on these women's ability to act on new knowledge, the project designers shared five assumptions and goals. First, pregnant women must eat the best available foods. Second, they must be able to identify these foods and to want them. Third, mothers must not rely solely upon breast milk to feed babies over five months old. Fourth, mothers must know about and use maternal and child-health centers regularly. Fifth, they must understand the importance of limiting family size. In short, the program goal is to create a climate of security in which mothers can learn that infant and child morbidity and mortality can be reduced and that women need not bear several children to make sure that a few survive.

Since the problems of nutrition, health and family planning are usually related, CARE decided to treat them as parts of the same problem. Accordingly, the workers who visit the families deal with all these problems and stress the connections of one problem to another.

Similarly, the messages carried by comic books, radio dramas, posters, films, calendars, filmstrips, and flipcharts overlap and recur. When nutrition is the subect, the audience learns that too many pregnancies undermine a woman's nutritional state. Sanitation is linked to worm infestation, and better health to the start of infant supplementary feeding.

A fictitious but representative slum family has been created for use in the project materials. The man, Munniswamy — who has been vasectomized — is a rickshaw driver. Munniswamy, his mother, wife, and two children star in a comic book series that deals with infant nutrition, sanitation, de-worming, supplementary nutrition, immunization, vitamin A, vasectomy, tubectomy, the treatment of child illness, and the introduction of infants to supplementary foods. The family of Munniswamy and his wife Nuniamma also forms the nucleus of a radio 'soap opera.'

In the production of all media, the extension educator was kept very much in mind. Artwork was shown to her and modified according to her comments. (This sort of informal pre-testing revealed a strong preference for bright colors, which were used lavishly in the posters and comics.) Similarly, the communicator's language, that of the slum dweller, became the language of the messages.

In this project, what one medium lacks in terms of reach and coverage is supplied by another. Posters are displayed only at the centers, but the films are shown in all the city's theaters. The comic books are distributed to the beneficiaries by the extension educators, while the radio dramas carry the stories to a far wider audience.

The extension educator herself works with CARE personnel, helps identify different kinds of greens (some of which grow wild), and works out diets that are both inexpensive and nutritionally sound. She shows mothers how the same amount of money may be spent profitably or unprofitably and how family size relates to nutritional intake. When she conducts cooking demonstrations in slum areas, she drives her points home with posters, flipcharts, and comic books.

Every extension educator received notes on how to use the media CARE put at her disposal. She was also given a training manual that contains answers in the simplest language to the questions encountered in the field.

The messages prepared by CARE (all of which use Tamil), and CARE's media selection are now being evaluated by the Social Welfare Department.

The Environment

On the whole, Indian slum women have proved receptive to the ideas of better nutrition and of the need to limit family size (as the large number of tubectomies and the women's ability to recount the better sources of nutrition attest). But the woman does *not* control the family income, and she does not make all the decisions related to her own or her family's health.

If the mass media were directed *at men* to acquaint them with the dangers of repeated childbirth, the need of the pregnant woman for as much food as a manual laborer, and the availability of vasectomy as a simple means of limiting family size, needed changes might be easier to bring forth. Men need to be asked: "If you were a woman, how many children would you have?" They need to be told, in turn, that "If you are a true man, you will do something about it."

Women's lack of control over their destinies is, however, only one aspect of the cluster of problems that besets the communicator and the educator. Another is the neglect of the daily trials of the poor rural or slum family on the grounds that these problems are not "controllable." For instance, filmstrips, flipcharts, and posters tell a mother that she must supplement the baby's diet after five months; they even tell her how to make such food digestible. And of course they tell her that hygienic preparation of foods is of the utmost importance. But how can mothers whose homes have neither bathrooms nor running water practice even the most elementary hygiene?

Another problem concerns the need to reeducate doctors so that their directives can be synchronized with those of the extension workers. Project materials stress the need to take sick babies to a doctor, as most slum parents do. The doctor normally recommends a diet of arrowroot and administers an injection. While the treatment may cure the diarrheal episode, it does not cure the problem *(recurring* diarrhea) and it does not reinforce the messages of the interpersonal communicator. If the extension educator recommends giving a child with a simple stomachache food and plenty of water, so should the doctor (or vice versa). Additionally, the doctor should be discouraged from giving expensive treatments and encouraged to become an informal educator — to explain in simple language the nature and cause of the problem being treated.

Regardless of what the final evaluation says about the CARE project's impact upon maternal and infant health status in the area, two incontrovertible facts must be taken into account. First, the communicator cannot hope to accomplish much where basic facilities (such as potable water and adequate sewerage) are lacking. Second, media projects intended to benefit only women can succeed only partially, if at all.

■ *Manorama S. Moss, CARE-Tamil Nadu, College Road, Madras 6, India*

An Interview With Father Antonio Cabezas, Director of Radio Santa Maria

Antonio Cabezas met with the members of the Clearinghouse staff and that of its parent organization, the Academy for Educational Development, on March 7 in Washington. He played tapes of RSM programming and participated in a question-and-answer session that lasted over two hours. Part of the transcript of that fast-moving meeting is here reproduced — as much for the flavor as the facts.

Staff: What attracts students to *Radio Santa Maria?*

Cabezas: Opportunity. Fewer than 10 percent of the Dominican Republic's primary schools in the countryside go through the sixth grade, while *RSM* offers grades seven and eight too. We give people educational benefits that other institutions can't.

Staff: How were you able to convince education officials to allow you to certify students who study outside the formal school system?

Cabezas: It wasn't easy. I appeared before the Minister of Education over and over to plead our case. Over ten years, Ministers came and went. Maybe 15 held office during that time. Some of those 15 listened, especially as *RSM's* reputation and connections grew. With requests for information on *RSM* streaming into the Ministry of Education, the Minister eventually had no choice but to accredit the radio school.

Staff: What turned out to be your most compelling arguments in your case for official acceptance?

Cabezas: One was statistics. The Ministry knew full well how few of the country's rural primary schools offered all eight grades, and we were one answer to a big problem. Second, we were offering quality education, not a second-rate substitute. We had good textbooks, excellent teachers with master's degrees, and a curriculum based on government specifications. We were following all the rules, so the question was not "why?" but "why not?"

Staff: Does the Ministry contribute anything to the program?

Cabezas: Yes. The most valuable help it gives is recognition, but we have also received funds amounting to about $8,000. The Ministry does not pay the *RSM* teachers' salaries, but it doesn't choose the teachers either.

Staff: Does following the formal curriculum limit your freedom to teach what you think is useful?

Cabezas: Not much. With the educational level so low in the Dominican Republic, almost anything we do is basic and

Staff: Are you in fact covering material and offering courses not specified in the curriculum?

Cabezas: Oh yes. We do everything that is demanded of us and more. In our certificate classes, the official curriculum forms the basis of the lessons, but to this basis we add practical information. And, you must remember, *RSM's* accredited courses account for only part of the broadcasts. Our nonformal education programs cover a wide range of subjects.

Staff: Are your students tested?

Cabezas: Yes. The Ministry of Education oversees our testing procedures and examines the results of the tests on the subject matter it specifies. We test the students on the unofficial curriculum ourselves.

Staff: Are the Ministry's test monitors the same people who visit and inspect *RSM* at other times?

Cabezas: Yes. Two of the three people who supervise each exam are local public school teachers designated by the Ministry to act as supervisors. The third is an *RSM* teacher.

Staff: How do *RSM* students feel about taking standardized tests?

Cabezas: The tests do cause some problems, some uneasiness. But *RSM* students fare at least as well as in-school learners on these tests . . . We had to have some common ground — between the official schools and ours, that is — and we knew the government was not going to change, so we changed.

Staff: How do you bring real-life concerns into the curriculum?

Cabezas: We unite all the courses and all the concepts by weaving a social theme into each week's lessons, one that is important and often timely but that will not upset the students.

Staff: If the theme flows through both the nonformal and the cultural aspects of the radio program, doesn't the emphasis become rather overwhelming?

Cabezas: No, because each theme has so

"family," for example. It can be approached from any number of perspectives. We might develop broadcast segments on 20 aspects of family life. Each will differ from the rest, so students get a feeling of continuity, not of repetition. We examine the formal curriculum through the lens of our chosen topic and always come up with some interesting angles. We also use a variety of formats, many of them dramatic, to keep the programs from growing stale.

Staff: What kind of listener ratings does *RSM* get?

Cabezas: I don't have the figures. I dou[illegible] if anyone in the Dominican Republic doe[illegible] But I do know that the money we get from advertisers is twice what the commercial stations in our area get for the same amount of air time.

Staff: What sort of people hold the microphone when you make field recordings and who runs the tape recorders? Farmers and peasants? Co-op leaders? Media professionals?

Cabezas: We put our 20 portable tape recorders in the hands of people we think are going to be articulate and are going to bring back good material. That can mean just about any responsible person.

Staff: You've said that people can use the recorders in whatever way they choose, but that sounds too easy. Who decides what will be broadcast, what will be edited, and what will be discarded?

Cabezas: The director of each department at the station. If a person has a tape that he thinks is suitable for the Open University format, he will take it to [illegible] Open University Department and t[illegible] members of the department will edit it and schedule it as they see fit.

Staff: What importance do you think *RSM's* relationship with the Catholic

Radio Santa Maria

Begun in 1964 under the auspices of the Catholic Church in the Dominican Republic, Radio Santa Maria (RSM) centered its initial educational efforts on a literacy program that helped to certify more than 25,000 adults over a period of six years. A needs assessment defined the focus it has taken since 1970 — programs leading to certificates at the primary and intermediate levels.

Modeled after ECCA (Emisora Cultural de Canarias), *the radiophonic school begun in Spain in 1965,* Radio Santa Maria *depends on three educational aids: workbooklet texts, radio broadcasts, and field teachers.* RSM *also attempts to integrate the principles of lifelong education — relating school learning to real-life needs — into the traditional school curricula. Thus, classes in mathematics, Spanish, and social studies are illustrated by weekly "central themes" that represent peasants' life situations; themes used in the past include human exploitation and dependence.*

While daytime and evening programming include music and nonformal education programs on agriculture, health, and family planning, the hours from 7:00 to 9:00 p.m. from Monday through Friday are reserved for graded lessons. During these hours, when five other commercial and religious radio stations extend the broadcast sphere, RSM's reach is nationwide. Four grade levels are broadcast each evening, with half an hour allotted to each grade. Four seven-minute lessons are spread over an hour's broadcast. The remaining interludes provide for active student involvement in study and the completion of worksheets. Most of the teaching is done by a male-female team; the teammates assume teacher-student roles, asking questions and pausing before answering so that the radio audience has time to come up with answers at home.

On Saturdays, students throughout the country congregate, usually in groups of 20, in local centers for two-hour sessions with a field teacher. Here, completed worksheets are collected (to be corrected and handed back the following week), students' questions are handled, and the central theme is discussed. In addition, each student buys the next week's packet of six to eight worksheets at a cost of U.S. 25 cents (of which the field teacher receives 15 cents).

— Excerpted from *"Radio Santa Maria,"* a CDC *Project Profile* available free upon request.

participate or convincing the government that you should be allowed to do somewhat unconventional things?

Cabezas: The Catholic Church in our particular region actually lets us do whatever we want to do. Of course, the backing of the Church helps tremendously because people in our region are deeply religious. When you say "I work for *Radio Santa Maria,*" all the doors open. A private citizen acting on his own would find most of those same doors closed . . . But, just as important as church support is the fact that the radio station broadcasts material that is in line with our nation's values.

Staff: The charisma of the founder often seems critical to the success of a development program, at least until that energy can be transferred. How do you intend to transfer your own enthusiasm and to keep *RSM* dynamic?

Cabezas: Our reputation helps perpetuate our work. *RSM* now has power in the eyes of politicians at election time. We also get invited to seminars and meetings with the Ministers of Agriculture and Education because we are well-known and have a large constituency.

As for the question about personal enthusiasm, I think the answer is that it is vital but also contagious. For example, the Peruvian government has employed many of *RSM's* methods successfully and without the help of the Church or religious leaders. I don't doubt that in another country or another region, another institution has the same potential. ■

Village-Level Organization — The Link Between Agricultural Research and Farmers' Fields

(Part I of this article appeared in DCR Issue 22.)

The efforts made so far to transfer newly developed technology from agricultural research centers to farmers' fields can be classified by approach as being either individual-oriented or community-based.

The individual-oriented approach depends upon the services of the extension agent, who is supposed to visit villages and contact individual farm families. Its successes can be credited to two variables: the efficiency of the system and to the cooperation of the farmers served by it. Its many failures at keeping farmers up-to-date on agricultural achievements made at research stations reflect an impractical resolve to reach every farmer and a basis in experience and ideas borrowed from western countries, the U.S.A. in particular.

Studies show that these services are strongly biased toward the needs of the more well-to-do and progressive, even entrepreneurial, farmers. Yet, since rich and educated people in developing countries tend to have their own sources of specialized information — an agricultural specialist, a commercial dealer, an educated child, etc. — they require the extension service only during emergencies.

The clientele of the extension service tends to be composed of farmers who are in least need of help, partly because extension agents tend to spend more time with people who can understand and thus appear receptive to new ideas. As Neils Roling and Joseph Ascroft report, fieldworkers they asked to recruit farmers to attend training courses invited primarily farmers with higher than average incomes — ostensibly because they knew these farmers best and because most of them were not adequately trained in either the subject matter or the means of transferring new information to farm families. A lack of mobility and an impossible workload can also worsen the problem.

The other approach to reaching farm families emphasizes working with organized groups at the village level to promote cognitive and behavioral changes. This approach is based on the assumption that people live and function in groups and that peer-group influence helps shape individual behavior. Meeting and working in groups tends to reduce individuals' anxiety, fear, and uncertainty — as is evident in a Jordanian program designed to transfer newly developed technology to farmers' fields.

A wheat-improvement project in Jordan is achieving significant results in convincing farmers to adopt new production practices by channeling its activities through village-level organizations, mainly agricultural cooperatives. Project workers recruit farmers with small land-holdings to form agricultural cooperatives through which members purchase inputs such as cleaned and treated high-yielding seeds, fertilizers, chemical weed-controls, and farm machinery needed for land preparation and harvesting. Farmers pay the cost of these services after the harvest, in produce if they like. If the crop fails, farmers may delay payment until the next harvest.

The communication component of the cooperatives has contributed significantly to their efforts to convince farmers to adopt new technology. The cooperatives have provided farmers with the chance to make contacts, meet, and (often) articulate and discuss their problems with each other's help and with that of government agricultural officials and of cooperative personnel. Besides providing the farmers with the opportunity to learn about new ideas, this system enables the farmer to adopt or reject an innovation on the basis of what he knows about the opinions and behavior of peers, friends, and relatives.

Before using a new technology, farmers with small farms want to weigh its costs and make sure that it produces enough gain or profit to justify abandoning the old and familiar method. Because few of them are able or willing to bear the risk individually, because most of them calculate and evaluate every conceivable implication before trying the new, and because adopting a new technology is adopting a new behavior that has social risks involved, the advantages of group learning and group activity need only be presented to be appreciated.

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Village-Made Educational Materials: Three Experiments That Worked

In the absence of two-way communication systems, in which materials-producers receive feedback from villagers, the development of irrelevant centrally-produced materials that advocate inappropriate solutions to development problems continues. Ironically, these materials perpetuate the myth that only the "experts" hold the key to social change. To deal that very myth a blow, we have tried to work out alternatives to "expert" and centralized materials production. The following sketches show how our methods worked in three development projects in Africa.

Cattle-Dip Management Program

To conquer tick-borne diseases, every cattle owner must dip all his stock regularly in a chemical bath. At the onset of the Cattle-Dip Management Program near Sotik, Kenya, however, the dipping facilities were not being kept in good condition and the dip was often too weak to work.

Moreover, some farmers did not dip their cattle at all, others did so only irregularly, and most dipped only upgraded animals (thereby leaving the disease-resistant indigenous Zebu livestock carrying infected ticks).

Discussions with local farmers and veterinary staff quickly revealed that many farmers did not fully understand how dipping livestock controls ticks. They also revealed that those farmers who understood the importance of dipping refused, logically enough, to pay dipping fees when the chemical was understrength and thus ineffective.

Veterinary extension personnel had been attempting to tackle these problems by meeting with cooperative staff and farmers. But because these local fieldworkers were not familiar with alternative approaches to adult education, education by exhortation had become the norm and the extension personnel's efforts were unsuccessful.

To facilitate learning activities with both cooperative personnel and farmers, we developed various audio-visual materials: three-dimensional models, chemical demonstrations, locally shot black-and-white photographs depicting improved animal-husbandry practices, and black-and-white photobooklets with Swahili captions and companion tapes in the local language.

These materials were most often used right at the dipping facilities so that farmers who dipped irregularly or who dipped only their upgraded stock could be reached. The materials were also used at farmers' meetings to encourage those who did not dip any of their cattle to join the communal dipping program, and at cooperative committee meetings called to address management problems .

During these learning activities, *Wazee* (Swahili term of respect for "elders") were encouraged to tell of past animal-husbandry practices so that all farmers could begin to reflect upon the changes that had taken place as well as fathom their implications. Questions were referred back to the group so that all the farmers were free to answer. At these meetings local information sources were identified by the program staff members, who refrained from introducing outside information until they knew for certain that this information would be appropriate.

Gradually, discussion and proposals that incorporated community knowledge gave birth to relevant solutions, many of which were later successfully implemented. Management of the dips became more efficient, greater emphasis was placed upon maintaining the correct chemical concentration in the dip tanks, an improved system of record-keeping was devised and put to use, and much-needed repairs to the dipping facilities were made. Consequently, the number of cattle deaths due to tick-borne diseases dropped significantly following the start of the program.

Chebilat Women's Group Program

In 1972, the Chebilat Women's Group was stumbling in its move toward self-management and total self-reliance. Although the group was organized on a cooperative and democratic basis, members were not participating in management and decision-making, the steering committee was diffident, and the day-to-day management was being handled by a young woman without adequate organizational and accounting skills. The group was losing money when it should have been turning a profit, the women were growing suspicious of each other and particularly of those in charge of funds, and group cooperation was becoming impossible.

Informal discussions with individual members revealed that many women deplored the situation and recognized the roots of the problems facing the group. Yet, because "top down" decision-making had become the norm, these women felt they could not speak out at meetings, and the early enthusiasm of group members had soured and turned to apathy.

Suspicion had to be tackled first. If women could read and write numbers, we reasoned, they could then check their own "credit cards" as well as assume more managerial responsibility. To eliminate suspicion, as well as to promote basic numeracy, we developed number games, taped exercises in the local language, devised calendars to help women read numbers and plan activities, and obtained blackboards and chalk.

The women clearly enjoyed playing the games and using the cassette tape recorder. Those with some arithmetical skills acted as facilitators and led meetings, though all actively helped each other identify and write numbers. Attendance at meetings was sporadic, however, despite the keen interest of some members. Apparently, even though all took pleasure in learning through problem-solving, most women would not participate fully in the absence of well-defined and group-recognized needs. Consequently, we began to use the cassette tape recorder to facilitate dialogue among group members. We gave women who were reluctant to speak out during women's group meetings the chance to tape record their comments in private.

A cassette tape recorder and blank tapes were circulated among individual members, who were asked to record their opinions. In small groups, informal interviews and discussions were recorded. The tapes were then replayed for other women who, in turn, were asked to respond on a tape to what they heard. As more women expressed their dissatisfaction with the management of the group and as others listened to these tapes, women began to meet to discuss the group's problems and to forge solutions.

Their decisions, *all of which were implemented,* included the agreement to train three women in management and accounting techniques, to hold regular general meetings, to develop guidelines for management and decision-making, to establish a small-scale loan scheme, to institute strict rules governing payouts, to build an office, and to rent land for the communal production of cash crops.

Members of the Chebilat Women's Group have continued to move forward toward self-management and self-reliance. Although finding steady markets for their handicrafts remains a problem, returns on their communal farming activities have made the problem easier to bear. They built a crop storage bin in 1975, and they plan to increase their acreage.

The Local Production Program

We initiated the Local Production Program in 1976 to further explore the potential of small media in community development. In particular, we saw the need for both problem-posing and informative materials, and for teams of "producers" who live more or less permanently in the community. Trained in the various uses of simple media and in materials production, these producers would count on other villagers to help find information, serve as resource people, and help produce materials. At the very least, villagers would be involved in a new and creative experience. At most, these activities would facilitate social and economic development.

Equipment and Training Specifications. Although training focused mostly on producers, other villagers were also encouraged to experiment with various pieces of equipment. Generally, the villagers were trained on the spot as a need to use a certain device arose.

We started activities with three cassette tape recorders, all of which had digital

counters, built-in microphones, fast-forward and review mechanisms, and the capability to use either electricity or 12-volt wet cells. We also had two fixed-lens cameras, and two portable slide-projectors.

Training consisted of hands-on operation. The average person learned how to operate and maintain a recorder in about two hours, and nobody found the task impossible. On the other hand, many older people could not take clear photographs simply because their eyesight was too poor, and all found mastering even basic photography more time-consuming than learning to use tape recorders.

Little money was available for film, so only two members of the production team were trained in black-and-white developing techniques. After we helped them develop two rolls of film, they were able to develop negatives on their own. When film was not developed properly, we had the producers retrace the steps they had taken in order to identify the problem. The procedure was simple and satisfying, so understanding came rapidly.

Photosketching, a process whereby a projected negative or picture is drawn onto paper, proved easy for the beginner to use to create informative and problem-posing posters. After one or two tries, people invariably began to see the importance of excluding irrelevant background details. (At times, in fact, the photosketched posters they made were clearer and easier to read than the negatives from which the photosketches were drawn.) Adults in training quickly learned to use two or more negatives to compose a picture and to move the projector closer or farther from the paper to enlarge or reduce images.

Materials Production. We began local production activities with five villagers. Four of them had previously worked with adults through the government extension services and one had taken part in the Chebilat Women's Group Program. All had been exposed to centrally produced materials, and three had used these materials with groups of local villagers.

At first, topics for the information materials were chosen on the basis of the availability of resource people. Later, when the team was more experienced, we encouraged its members to seek out information of interest to them.

The first series of materials were, of course, not technically perfect. At first, as much time was spent introducing the resource person as conveying the information. Then too, commentaries tended to be long, rambling, and full of irrelevant details since illiterate resource people could not use scripts.

But, with experience, most villagers could produce excellent informative materials. The tapes they made were equal in quality to the centrally produced tapes we had used, if not better. The producers learned to use sound-dubbing procedures to create mixed tapes of recorded discussions, interviews, commentaries, music, and sound effects. Photoessays proved more difficult to produce, but with practice and the constructive criticisms of resource people and other villagers, the producers developed clear and concise examples of the medium.

Problem-Posing Materials Production. The production of problem-posing material was not begun until the producers knew how to use simple media to convey information. Nevertheless, far more time had to be spent and a different approach had to be used to help villagers produce problem-solving materials. Prior to production, community problems were identified by means of a four-week listening survey. While going about their daily business, the producers and others simply took note of people's complaints. They based the materials on the problems mentioned most often.

Most villagers initially involved in production activities were themselves experiencing the problems to be depicted in the codes and thus found it difficult to distance themselves enough to portray community life. We consequently found ourselves deeply involved in all aspects of production — instead of on the sidelines as we had been. We helped villagers identify problems and needs and initiated discussion on how best to present the effects of problems. This process did help people analyze their own situations, but when we withdrew our active support, production halted.

The production standstill forced us to change our approach. Instead of attempting to involve many villagers as we had done in developing informative materials, we narrowed our focus to the production team. We reasoned that if the production team could be trained to produce effective problem-posing materials, they could then use these materials with other groups of villagers. The objective, analytical dialogue, would occur in each case — within the production team as a result of developing codes and in group discussions during which the codes would be used.

To acquaint the team with our purpose and with production techniques, we prepared a script for a taped socio-drama. We asked team participants to take parts in this drama, discussed their particular roles, and then tape-recorded the performance "ad-lib" for later replay. In the discussion that followed the replay, we focused on the problem portrayed and then examined the group dynamics involved in problem-solving. This activity plus a little more experience equipped three of the five participants to develop effective problem-posing materials unaided.

Facilitators. Two different groups of facilitators took part in the Local Production Program. One was organized by us as a production team, and the other emerged by virtue of its voluntary involvement. The created group trained other villagers in the use of equipment, organized activities, and encouraged villagers to act as resource people, as well as to help produce materials. This group used many of the finished materials in their work with groups of local villagers. They also attended a brief seminar during which problem identification, leadership, discussion methods, and the best uses of various materials were discussed. All but one of these facilitators expected payment for their time and effort.

The second group of facilitators emerged unexpectedly. These villagers were proud of their accomplishments in production activities and wanted to show others the materials they had developed. For members of this group, personal satisfaction was payment enough.

Program Effectiveness. Observation and discussions with the participants at all levels were the evaluative tools. Together both validated several conclusions. First, the act of producing materials itself gave rise to analytical dialogue. Second, by interacting with nonformally educated adults in a mutual learning experience, the producers came to realize that problem-solving need not be left to experts. Third, exposure to different kinds of locally available information prompted the producers to take constructive action — planting trees, setting up a chicken project, using contraceptives, etc.

For the resource people — average villagers — a new self-respect and confidence grew out of their involvement in materials production. Yet, only when the production of problem-posing materials began, when information was sought and materials developed that addressed the real problems of the majority of villagers, did the whole village begin to feel the effects of the project.

Conclusion

Educational strategies that leave villagers passive, unmotivated, resistant to change, and unproductive are those that bid villagers to implement solutions that have been determined for them. In contrast, adult education approaches that involve villagers in a total process — reflection, dialogue, and action — are those that respect and take seriously the vast accumulated experience and knowledge villagers possess. These latter approaches invite villagers to identify and analyze their problems, to reflect upon their experience, and to recognize that truly liberating change must begin with the villagers themselves.

The impact of the Local Production Program on the producers, the resource people, and the community — the increased levels of awareness, the changes in attitudes, and the action taken — has convinced us that small media can play a leading role in adult education. If our conclusion is not novel, our evidence is nevertheless compelling.

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Dilemmas in Country X: Candid discussions about failures

The following dilemma was submitted anonymously by a frustrated nutritionist. More a case study than a story, it is the analytical exploration of a development effort that stalled because stated institutional goals and the beliefs of those assigned to carry the goals forward were out of kilter.

(The editor invites readers to submit reports for this column. Authors' names — as well as those of the people, agencies, and countries involved in the projects — will be withheld upon request.)

The Brazilian educator Paulo Freire and some of his colleagues spent the 1950s and 1960s developing a now famous pedagogy that would liberate rather than domesticate disadvantaged people. Of late, Freire's ideas have found expression in more concrete terms as researchers have devised ways to code people's behavior on the basis of writing samples and speech. But Freire's contention that social and political consciousness develops in three stages still provides insights into the development process. He says, in brief, that people who possess *critical-stage consciousness* of their world are concerned with transforming the social system, that people who possess a *naive-stage consciousness* are concerned with reforming individuals (who are seen as the true cause of injustice), and that people who possess *magical-stage consciousness* fatalistically accept things as they find them.

I am oversimplifying these terms to lay the groundwork for a problem that has been bothering me since my return from a stay as a nutrition consultant in Country X. The problem is really a question: Can a development project whose planning documents reflect critical-stage consciousness be successfully implemented by people whose behavior reflects magical-stage and naive-stage thinking?

Two years before I arrived in Country X, its health ministry had conducted a sector analysis that revealed, among other problems, discrimination against provincial and local health officials (mostly medical technicians and educators) by central office bureaucrats (mostly doctors). One year before I arrived, the Ministry of Health had hooked up with an international organization willing to fund needed changes. Shortly before I arrived, a task force composed of four high-level urban bureaucrats within the Ministry and six consultants supplied by the international agency had been formed to revamp the Ministry. The task force had no rural or provincial members, although it did interview rural people to get disease histories, assess living conditions, and size up local attitudes toward certain foods. The project documents drawn up by the task force heavily stressed changing the Ministry's norms, administrative procedures, regulations, and laws. In particular, a new series of guidelines prepared under its direction spelled out in detail how offices and individuals were to cooperate. These guidelines also redefined the decision-making process, delegating unprecedented power to middle-level administrators. Other documents specified that the lion's share of the total health-sector investment was to be used on nutrition projects at the provincial level. None of the plans took interpersonal concerns into account and all focused on systems, principles, and procedures — an indication that the task force possessed a critical-stage consciousness.

The 15-member group within the Health Ministry that was charged with implementing the 10-site project, in contrast to the task force, consisted primarily of middle-level health planners, nutritionists, dieticians, and administrators. Most of the group had urban backgrounds, and those who had attended rural schools played down the fact. Hence, it soon became painfully clear that the goals that the Ministry of Health had embraced as an institution were not in accord with the priorities and beliefs of the Ministry's middle-level personnel. In a bind, team members resorted to blaming authorities, avoiding action, and attacking each other whenever a problem came up. They resorted, that is, to the kind of behavior characteristic of those with naive-stage or magical-stage consciousness.

Not surprisingly, this project's goals have been seriously compromised, and the nutritional status of the rural poor in Country X has not improved materially. Yet, the implementation team is not solely at fault. While project documents seemed to reflect critical-stage thinking, the failure of project planners to include rural and provincial people in the task force shows an utter lack of good sense. It also shows that critical consciousness is not a mental exercise but a mental state born of experience and maybe even of physical suffering: perhaps only those who have shared the problems (diseases and inadequate diets in this case) of the disadvantaged themselves possess the potential to acquire critical consciousness. At any rate, outsiders cannot expect to solve the problems of the rural poor by collaborating with the urban elite. If they do, the contradictions between the goals they put on paper and the force of ingrained bureaucratic traditions may be counted upon to paralyze those caught in the middle. ■

Development Communication Report

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RADIO FOR FORMAL EDUCATION & FOR DEVELOPMENT COMMUNICATION

Experience shows that radio can be used to help formal education systems to meet their goals in three ways. It can help improve the quality and relevance of education, keep educational costs down, and broaden access to education, particularly in rural areas. But radio can be used to extend the impact of time, money, and effort outside the formal education system too. Open radio broadcasting, radio campaigns, and radio-listening groups have been used successfully for nonformal education and other aspects of development communication, and a substantial body of literature now documents these experiences.

Formal Education

The four alternative strategies for using radio in formal education must be assessed in terms of users' needs. The first is using radio to enrich learning, i.e., to provide occasional lessons or experiences that most classroom teachers cannot.

The second, direct instruction, involves using radio to carry most of the instructional burden in one or more subjects. The third, extending in-school education, is using radio in a monitor-assisted classroom in most subjects in places that lack qualified teachers. The fourth, distance learning, involves the use of radio with some combination of textbooks, correspondence, and occasional personal interaction. This strategy is designed for use without teachers and schools, thereby keeping costs down and extending access.

Little needs to be said here about using radio to enrich in-school education since such uses entail little prospect for substantial educational change. This is not to say that the low cost and other benefits associated with this use of radio should be dismissed lightly, only — to reiterate — that this strategy holds no promise for major improvements.

In contrast, the potential for using radio in direct instruction in one or more subjects holds out a strong promise and an equally strong challenge to educators. The Nicaraguan Radio Mathematics Project provides a striking example of how much impact a carefully designed radio curriculum can have on student achievement. While comparatively costly by the standards of instructional radio, this project has sufficiently reduced student-repetition rates that its costs are more than offset by savings. Still, using radio for direct instruction does nothing to widen overall access to education. Nor — a further caveat — is evidence at this time sufficient to guarantee that the results documented in Nicaragua could be attained elsewhere. (*Ed. note: compare Searle, p. 2.*)

The principal purpose of using radio to extend schooling is to expand rural people's access to information and skills. Case studies of two Mexican projects that used radio to extend schooling — one near San Luis Potosi (*Radioprimaria*) and one in the remote Tarahumara region— revealed mixed, but ultimately disappointing, results. While both projects showed evidence that radio could teach about as effectively as traditional elementary-school teachers, neither expanded beyond the pilot stage and radio Tarahumara has recently ceased broadcasting. Perhaps better financing and a firmer government commitment would have made the critical difference; surely, similar projects will contain an element of risk.

The final strategy, using radio in formal education as a component of a distance-learning system, has proven successful in Kenya and the Dominican Republic, among other places. In Kenya, radio was combined with correspondence to upgrade the performance of teachers. In the Dominican Republic, similar methods were used to provide elementary and secondary-school equivalency programs for adults. Both projects appear to have maintained existing educational standards and extended access to schooling; and in the Dominican Republic at least, distance learning has been perhaps only half as costly as traditional instruction. And both gave previously passed-over groups new educational opportunities.

The history of radio's use in distance learning in both poor and rich countries is no longer sketchy. Today's educational planner can be reasonably sure that this use of radio works. However, though the costs involved appear low, much remains to be learned about the economics of distance-learning systems. The specific types of educational problems for which distance learning provides the most cost-effective solution also await precise enumeration and classification.

Development Communication

Open broadcasting, radio campaigns, and radio programs tailored to benefit organized listening groups have all been employed to motivate, to inform, to teach cognitive or work skills, and to change behavior. Two-way radio has also (to a lesser extent) been used to reach these goals.

As a rule, the more attention paid to organizing the listening audience, the more limited the reach of radio becomes. Thus, open broadcast is best used to get out an interesting message, while the listening-group strategies (radio schools, farm forums, and radio animation), which require expending time and material resources, are best used to promote more complex and long-term changes.

No single strategy should be forced upon communication planners, but they should be aware that radio can be used in a variety of ways for a variety of goals — none of which can be reckoned with until the objectives of the development project are clearly spelled out. Indeed, a review of four projects in which radio has achieved its goals with special success — the Kenyan health broadcasts, the radio program that used nutrition "ads," the Guatemalan agricultural information programs, and the Tanzania radio campaigns — illustrates the contention that the development goals being promoted and the special characteristics of the project determine the strategy, its effects, and its transferability.

The Kenyan health program, the Kiroboto show, has captured large urban and rural audiences. Its health messages are cast in a humorous format and delivered to many households that otherwise would have had no exposure to the issues and the facts. It has, in short, reached many listeners at a very low weekly cost with entertaining and educational health messages. An audience survey conducted as part of this project indicates that audiences are listening and that radio can reinforce the efforts of

(Continued next page)

THE CLEARINGHOUSE ON DEVELOPMENT COMMUNICATION, *DCR'S* PUBLISHER, IS FUNDED BY THE U.S. AGENCY FOR INTERNATIONAL DEVELOPMENT (DS/ED) AND OPERATED BY THE ACADEMY FOR EDUCATIONAL DEVELOPMENT

Two Kinds of Radio (Continued)

health agents or nutrition field-workers.

The nutrition radio-campaigns carried out by a U.S.-based advertising agency (*Ed. note: see DCR issue 20*) are another illustration of the open broadcast approach. While evaluative evidence remains inconclusive, the successful replication of the experience in several countries is beginning to give credence to the idea that advertising and social marketing techniques can be used to promote productive social change as well as to push consumer products.

The Guatemalan Basic Village Education Project (*Ed. note: see DCR issue 22*) has shown that careful programming can win the attention of a large rural aduience and foster changes in agricultural practices as well. By providing accurate agricultural information precisely tuned to the timing of the crop cycle, the BVE programmers maximize the chance that the farmers will try the practices recommended. The audiences are organized in part of the project, but high learning gains and high levels of innovation adoption have also typified some of the open audiences.

The first three cases demonstrate that radio can be used to promote good health, sound nutrition, and agricultural productivity. They show too that radio attracts a wide audience and gets messages across even to an unorganized audience. Two of the cases show that it can affect behavior changes as well. Since all these changes have been wrought at low cost, this evidence suggests that most countries could use radio as a national resource to pursue important development goals.

The last example, that of a radio campaign, reveals another dimension of radio's potential and shows that broadcast does indeed mean *broad cast*. The Tanzanian campaign, Man Is Health, mobilized over 2,000,000 adults in 1973, and its success testifies to radio's potential for reaching large audiences. Campaign costs in Tanzania have been modest and could be relatively low elsewhere, though the careful planning and control critical to the success of this campaign may be difficult to achieve in some countries.

Systematic review shows that radio's potential in development communication is for the most part untapped. Political, infrastructural, and some technological constraints upon its use cannot be ignored, but neither can its enormous promise.

■ *Dean T. Jamison, Development Economics Department of the World Bank, and Emile G. McAnany, Stanford University's Institute for Communication Research*

(This article is based upon research supported by the World Bank and published in Radio for Education and Development,*)*

Using Radio For Classroom Instruction

In 1973 the Development Services Bureau of USAID initiated an experimental project to test the feasibility of providing direct instruction in mathematics to children in primary-school classrooms by radio. Most prior applications used radio lessons as an auxiliary to mainline teaching, to provide enrichment or supplementary practice. What USAID wanted to know was whether the medium could be used to carrry the full burden of instruction and whether such a use could improve the achievement levels of students at a cost developing countries could bear. The Radio Math Project, which is run in collaboration with Nicaragua's Ministry of Public Education, is nearing the end of its research phase and the results have provided an answer to USAID's question.

Since the project's goal is to improve the quality of mathematics instruction, evaluations have focused on achievement-test scores. The results — which can be generalized because both radio classes and control classes were selected at random — show that in Grades 1, 2, and 3, students studying by radio reach significantly higher achievement levels than do students in traditional classrooms. For example, the mean post-test score for radio students in grade 1 was 55, compared with 34 for control students. Two groups of second-grade radio students were studied, those who had used the Radio Math Program for one year and those who had used it for two (in first and in second grade). The mean post-test scores were 74.2 for control students, 78.6 for students with one year of radio classes, 85.6 for students with two years of radio classes. A similar progression was found for Grade 3: mean test scores for control, one-year, and two-year groups were, respectively, 56.0, 67.4, and 73.0.

How were these positive results achieved? One key is assuming complete responsibility for all mathematics instruction of the children taking the radio lessons. The project staff puts together the daily lessons (each of which has two parts — a half-hour radio broadcast plus a set of post-broadcast activities) that the children use in the schools during their regular mathematics periods. The teacher supervises the class during the broadcast lesson and also conducts supplementary activities during the remainder of the mathematics period; these activities are based on suggestions provided in a teacher's guide prepared and distributed by the project staff.

The content of the lessons is taken from the official syllabus of the Nicaraguan Ministry of Public Education, the same syllabus that guides the activities of teachers in traditional classrooms. Thus, despite the pedagogical differences between the traditional style of instruction and the radio-based instruction, lesson content is essentially the same and the focus differs only slightly.

In both the broadcast and post-broadcast portions of the lessons, stress falls on active learner participation; an average of five student responses per minute is elicited during the radio broadcast. These responses may be oral, written, or physical. Mathematical concepts, arithmetic skills, and problem-solving abilities are all taught in a direct, down-to-earth style that children can understand and appreciate. Lecturing and the use of technical vocabulary are held to a minimum, and songs, jokes, riddles, stories, and games are interspersed among the mathematical segments. The quick pace of the broadcast, the keen interest of the children, and the careful sequential development of mathematical concepts and skills have prompted some to characterize the programs as a cross between Sesame Street and programmed instruction.

A program that both captivates its audience and effectively teaches a subject as difficult as mathematics does not come about by chance. It must be developed according to a well-thought-out system of program design — the essence of which is feedback. Although a detailed annual plan is elaborated before the lessons are written, this plan is altered throughout the year in conformance with performance data culled from classroom observations and weekly tests. Evaluation is an integral part of production, and lessons reflect the implications of observational and test data from previously broadcast lessons.

Designing and administering tests and observing scattered rural classes on a daily basis require a large staff. Consequently, the curriculum development process is quite expensive. However, production outlays represent a one-time cost (taped programs are usable for years), and a great effort has been made to keep long-term operating costs down. No textbooks are required; each child has a small, inexpensive notebook, in addition to which seeds, bottle tops, and stones — free and abundant materials all — are used. The teacher's guide, like the taped programs, is reusable. In addition, radio receivers are shared (lessons for different grades are broadcast at different times, so a communal radio receiver can be passed from one classroom to the next during a musical interlude provided specifically for this purpose). In short, the high initial cost of curriculum development may be spread over hundreds of thousands of students to keep yearly operating costs low.

By paying careful attention to economics, as well as to educational and human considerations, the staff of the Radio Math Project has brought Nicaraguan children an educational system that is both of the highest quality and well within the budgetary reach of the poorest of countries. The success of the program can be attributed to the style of lesson and to the care with which curriculum material and instructional dialogue is developed — ingredients that can be transferred to other countries and to other subject matters.

■ *Barbara Searle, Institute for Mathematical Studies in the Social Sciences, Stanford University*

RURAL MEDICINE AND CB RADIOS IN GUYANA

During the past few years many developing countries have moved rapidly to increase medical care to rural citizens. But the limitations of local telephone systems and a paucity of roads often make supervision of para-medical workers difficult, if not impossible. So, countries trying to expand medical services are thus faced with a seemingly unsolvable dilemma: Should they attempt to supply para-medical assistance to remote areas when no qualified supervisors are available or should they hold off supplying medical care until the requirements for proper supervision are met? Recently, Guyana confronted this dilemma and came up with a new and innovative solution — a CB radio-mediated medex system.

Two years ago, the government of Guyana, in collaboration with the University of Hawaii, began to lay plans for the needed health-care system. It decided, in the course of planning, to extend medical care to the remoter regions of the country through itinerant nurses with advanced medical training. When news of this decision reached the local medical society, however, its member physicians pointed out that medical care delivered by individuals with less that full M.D. training can do unjustifiable harm to patients. But para-medical health care can, they also said, be excellent if the para-medic is supervised by a qualified physician. The Guyanese medical society therefore stipulated that the medex practitioners could work only if supervised directly by a trained M.D., but that the doctor did not have to be in the same location as the medex officer. Instead, telephone or radio contact would substitute for person-to-person interaction. However, since Guyana does not have a fully developed telephone system, and the country's coverage by civilian radios is not thorough, the country still needed some communication contact for the medex officers if the plan was to work.

Planners first thought of using Guyana's military radio system, which gives full nationwide coverage. Unfortunately, the medex officers would often be two or three day's travel from the military posts equipped with these radios, and adding radio hook-ups to the telephone system would have been unacceptably expensive.

Two other solutions seemed more promising than the military-radio option. One was installing a new military-style radio system for use by the Ministry of Health and the medex system. This solution, however, would have entailed using relatively complicated transmitters; thus, the medex would have had to receive training in radio operation. In addition, military-style transmitters are extremely expensive: a low-cost unit without antennae, microphones, batteries or generators may cost $2,500. Since each medex is expected to carry no more than U.S. $300 worth of medical supplies and equipment, such an expenditure for communications gear would be inappropriate. Finally, operating a system of military-style transmitters would entail establishing a major maintenance facility, a burden that the Ministry of Health could not assume.

The solution finally proposed was to purchase a large number of Citizen Band (CB) 40-channel transceivers (like those found on many private vehicles in the U.S.). These units have many features that recommend them for this kind of use. They are simple, easy to operate without extensive training, and cheap — when purchased in large quantities, as little as U.S. $40 per unit. Also, CB radios use little power (that from an automobile battery mounted in a motor vehicle or boat is enough), and maintenance is not a problem. At $40 each or less, the units can be treated as consumable items and replaced with new ones when they fail.

The major disadvantage of the CB radio is that its range is less than that of the military-style units. But Australians long ago struck upon a way to whip this problem: there, operators establish a relay network, passing messages down the line until the intended recipient is reached. And cost estimates of such a system run less than one-fiftieth of those for military-style units.

Guyana's CB-radio communication system has not been evaluated fully. But it is simple, inexpensive, and comparable to systems in Nicaragua and Guatemala — preliminary reports of which suggest that experimenting with antenna configurations can appreciably strengthen the rural health-care worker's communication links with expert supervisors.

■ *Fred W. Reed, Department of Sociology, University of Montana at Missoula*

MEDEX health systems rely on "medical extenders," para-professionals trained to assist doctors in primary health care. The term can also refer to any health-care system that uses para-professionals for primary care.

Two-Way Radio for Health and Development

Within the past decade significant innovations have expanded the accessibility and appropriateness of health services. In line with the World Health Organization's mandate to provide Primary Health Care to all segments of a country is the evolution of community-oriented, community-based health services directed by health workers from within a community. A key factor in the success of such innovative foundations for rural health has been the Community Health Worker — selected by the community, trained for one-to-four months, and supervised by health workers with more advanced training.

Experience in those regions where this type of rural health care has been implemented shows that *communication* is one of the key determinants of success. More particularly, this experience supports two generalizations:

1. Community health workers and auxiliaries need close and frequent supervision.
2. In most of the rural developing world, remote communities without good roads present special health-care problems.

Two-way radios have been found to provide valuable communication services to such communities, enhancing rural health in several ways:

- Providing a channel for advice and consultation with health professionals concerning questions of diagnosis and treatment of patients
- Supplying logistical assistance in maintaining essential equipment and supplies
- Facilitating the management and planning of preventive health services, immunization programs, and visits by nurses and physicians
- Making educational discussions on presentations from larger health centers possible

Deterents to the increased use of two-way radios have been mainly technical. Equipment is available but extremely expensive when related to modest rural health budgets; and maintenance and repair of complicated equipment requires skills seldom found in rural areas.

Given these advantages and these constraints, future work in this field should fall into two general categories:

1. Identifying and evaluating methods for using radio in nurturing rural health and planning for increased use of radios
2. Developing equipment that is more appropriate to the needs and resources of the Third World

An increasing number of countries are involved in various stages of planning and using two-way radios — Ghana has recently completed a planning exercise to use radios to link rural clinics; Guyana plans to use radios in its medex system; Nicaragua is beginning an experimental project using CB radios for short-range communication; new population and health programs in Bangladesh will entail the use radios on a test basis; and in Guatemala radios are used to maintain contact with auxiliaries during their field training.

As communication becomes recognized as the lubricant that keeps rural health services operating efficiently, ever more countries will be considering and experimenting with the use of radio. As costs drop, a greater number of appropriate radios will become available and radio use is sure to increase significantly. To optimize the use of this new medium, a variety of studies and evaluations needs to be undertaken now.

■ *Ned Wallace, Center for Appropriate Technologies for Health, University of Wisconsin at Madison*

Teacher Training Via Radio In Nepal

Five years of careful planning have culminated in an innovative teacher-training project that should vastly improve Nepal's capability for providing high-quality training programs for teachers needed in remote primary schools. To be developed and tested is a training program for untrained rural primary-school teachers that will rely on the medium of radio reinforced by written support materials and periodic short-term workshops. Project implementation was scheduled to begin in August of 1978. Experimental broadcasting will begin between January and March of 1980. One year later, regular broadcasts will commence.

In 1971 the National Education System Plan for Nepal was promulgated by His Majesty's Government (HMG). This imaginative and dramatic restructuring of the educational system reflected three main objectives: (a) to meet manpower requirements for national development, (b) to extend educational opportunities, and (c) to increase educational relevance. Extending educational opportunities to the remote rural areas was seen as one of the most difficult of the objectives, but also as that which stood to profit most from cooperative action between USAID and HMG. Hence, after a preliminary analysis of the problem, HMG requested in 1974 that USAID coordinate a feasibility study of the possibility of reaching rural populations with radio.

Reasons for the focus on radio were many. Nepal's economy is about 93 percent agricultural, with national development tied largely to agricultural improvement, and most farmers live in remote areas, so involving remote populations in development seemed essential. Further, Nepal is geographically isolated, and its rugged terrain has kept major sections of the country isolated from each other and from the center. The lay of the land has also made standard forms of land and air communication between large sections of the country virtually impossible.

The few radios and telephones in existence in Nepal are in the exclusive possession of small, relatively advantaged groups. Television will not be feasible for many years, and telephone communication is limited to the principal population centers. In theory, short-wave transmission has made nationwide radio coverage possible, though reception is obviously related to the number of radio receivers.

The first concern of USAID and HMG was to identify — in at least rough form — the pattern of radio utilization in Nepal, finding out whether or not radio's use was extensive enough to insure listeners' receptivity to radio as a teaching tool, and what kinds of programs audiences prefer. In 1973, therefore, USAID commissioned the New Educational Reform Associates (NERA), a local research organization, to carry out the needed research.

The NERA study revealed surprising sophistication on the part of rural radio users. "What all the data implies," researchers found, "is that radio is taken as a serious communications device by those who possess receivers as well as by those who do not. The two most popular radio programs among both groups, news and agriculture, are basically informational and not entertaining . . . radio's potential as an educational and motivational tool for national integration and development has only been very partially developed or utilized to date."

With all signals thus positive, the Human Resources Division of USAID, with assistance provided by UNESCO, UNICEF, and the British Council, coordinated a multi-donor feasibility study in 1974. The study team headed by Dr. John Mayo, then of Stanford University, concluded radio could be a powerful educational tool for Nepal — indeed, that this medium is uniquely suited to Nepal's educational problems and to the needs of both in-school and out-of-school populations. The team recommended that one or more projects be undertaken immediately to test feasibility, effectiveness, and cost in a carefully controlled environment. It further recommended that the first such project be aimed at untrained, in-service primary-school teachers.

Phase I of the training project — 18 months — will be devoted to carrying out all necessary developmental work, including ordering, procuring, and installing equipment; to designing and building facilities; to building up a personnel structure and providing staff training; to designing, validating, and producing radio programs, written support materials, and teaching manuals; and to developing an evaluation system.

Phase II — one year — will see the program conducted on a pilot basis for the benefit of about 100 teachers; at this stage, materials will be refined and modified as necessary. Target teachers will be brought together for careful orientation prior to the first broadcasts. They will be acquainted with the printed materials, the radios, and other materials. They will return to their respective schools, where they will listen to daily broadcasts and will study the related materials. They will be urged to practice new teaching concepts and approaches on a regular basis. They will receive the regular visits of supervisors who will answer their questions, and they will meet in learning centers about every two months for group review and study.

In Phase III — 18 months — the program will be aired in the same format to approximately 2,000 teachers nationwide.

The teacher-training project will be developed with a mind to the possibility of expanding Nepal's currently fragmented and rudimentary educational radio service into a nationwide educational radio "system." The expansion of radio for educational purposes is now actively supported by the British Council through training, and by UNICEF through the provision of radio receivers, training, and commodities. Given the current level of interest on the part of donors, as well as of HMG, the Primary Teacher Training Project — if successful — may be the first step in the development of such a system. However, the specific objective of the project is to develop Nepal's capability to train 2,000 to 2,500 primary-school teachers per year through regular radio broadcasts, residence workshops, and a test workbook — and to do so at a per-teacher cost well below the current figure.

■ *Burton C. Newbry, Chief, Office of Human Resources Development, AID Mission, Nepal*

The project will be implemented through a U.S. university contract. USAID will provide radio receivers, commodities, one transmitter, and training. An interesting feature will be the utilization of solar panels for powering the receivers.

PROFILES OF RADIO PROJECTS

Project Profiles, two-page summaries of development projects involving the systematic use of media, are published quarterly in groups of eight. *Profiles* on projects employing radio include the following:

Radio Santa Maria
Mauritius College of the Air
Kenyan Correspondence Course Unit
Radio ECCA
SITE Teacher Training (India)
Lesotho Distance Teaching Centre
Basic Village Education (Guatemala)
Radio Mathematics (Nicaragua)
Project for Equality of Access to Education for Women and Young Girls (Upper Volta)
Acción Cultural Popular (Colombia)
Radio Mensaje
The Radio Farm Forum Pilot Project (Thailand)
School On the Air (India)
Nutrition Mass Communication Project (Philippines)
Breastfeeding Campaign (Trinidad and Tobago)
The Model Family Planning Project in Isfahan (Iran)
Telemedicine in Alaska
Man is Health (Tanzania)
Association of Radio Clubs of Niger
MOBRAL (Brazil)
Movimento de Educação de Base (Brazil)
Masagana 99 (Philippines)
Lefatshe La Rona (Botswana)
Zaa Na Uwatunze (Kenya)
Rural Radio Education Project (Paraguay)
Tarahumara Radio Schools (Mexico)
Radioprimaria (Mexico)

Profiles can be obtained at no charge from Judy Brace of the Clearinghouse.

Successful Scriptwriting — Entrusting A Single Theme To Natural Talent

The backbone of any broadcasting program is the script. Good scripts produce good or poor programs, but bad scripts *never* produce good programs. The producer of a 20-minute documentary film must be prepared to give the scriptwriter a week or even a month to complete the script. Yet, educational broadcasting organizations seldom allocate as much as a week for scriptwriting, even though the audience of a single educational TV or radio broadcast often exceeds that of a documentary. No wonder scriptwriters in the broadcasting field feel underprivileged.

Even in film industries, scriptwriting tends to be overshadowed by other, more flamboyant elements. Nevertheless, good film directors and broadcasting program producers are keenly aware of the importance of the script. In fact, many film directors write their own scripts or at least reserve the earned right to improve commissioned scripts turned in by scriptwriters. Similarly, most first-rate educational program directors are capable of writing a coherent, workable script. Directors without writing ability, on the other hand, cannot make the best of the talents of competent scriptwriters, much less produce good scripts themselves.

Through every stage of instructional radio and TV program-making, scriptwriting is the nucleus; in a good script, all the toil, labor, and ideas of the educational policy-makers, curriculum specialists, program-series planners, scriptwriters, producers, studio teachers, accompanying-materials editors, production directors, technical operation staff, and evaluators crystalize. Only a well-organized educational broadcasting system can produce good scripts on demand because it alone can make functional a system in which the creative resources of the production staff can be counted upon to combine and bear fruit. Indeed, one mark of the good educational broadcasting organization is respect for the creative talent of scriptwriters.

Their importance established, can such specialists be trained? Yes and no. If *trainable talents* are recruited, they can be familiarized with the characteristics of relevant media. But intrinsic creative endowment cannot be compensated for by training; so, true talent should be found and then refined by training. The hunt for this talent takes time and energy, but it is not a lost cause if the hunters know what they are looking for — a clear and compelling writing style and, most important, composition skills.

If a program is to impress its message clearly upon each mind in the target audience, the program format should include an adequate introduction, follow-up, and conclusion that are centered on one theme. Similarly, any program series should have a consistent structure and be forceful enough to retain the interest of both teachers and learners from the course's start to its finish. Only through this serial construction can the theme of each program be clearly identified and its position within the framework of the whole instructional course be grasped.

Each program in this series should turn on one clear-cut central theme, never more than one. Beyond this basic criterion, asking the following questions should help educational broadcasting staff to assess the merits of the script and, it follows, the talents of the scriptwriter:

- Does the script have a single main theme and no more?
- Can any reader of the script easily pick out the theme and jot it down in less than three lines?
- Does the script flow? Does it have four, or perhaps three, movements like a musical piece? Or, like a Chinese poem, does it move from the introduction of the theme to its development, adaptation (or comparison, reflection, etc.), and conclusion?
- Does the script have a clear climax located near the end of the program?
- Does the script include meaningful pauses? Are there pauses for posing questions and for making members of the audience think for themselves? Or pauses for drill?
- If the script is for TV, can the reader figure out the program's plot from the visual element alone (not the audio part)?
- If intended for TV, does the script designate each camera movement (especially the close-up shot) according to the intrinsic requirements of program contents?

Each of these questions will be answered in the affirmative if the script is good enough to produce. But as to whether there is any substitute for natural writing talent, and as to the wisdom of stressing more than one major idea in a single educational program, the answer is invariably "no."

■ *Shigenari Futagami, Senior Mass Media Specialist, Education Department, the World Bank*

On Scriptwriting and Program Production

1. *A Handbook for Scriptwriters of Adult Education Broadcasts*, Volumes 1 and 2, edited by Brian W.W. Welsh, Friedric-Ebert-Stuftung, 53 Bonn-Bad Godesbert, Kolner Strasse 149, Federal Republic of Germany.

2. *Techniques for Improving Educational Radio Programmes*, UNESCO Educational Studies and Documents No. 30, by James M. Theroux, UNESCO, 7, Place de Fontenoy, 75700 Paris, France. (U.S. $2.75).

3. "Effective Educational Radio: An Approach to Analyzing Programs," by James M. Theroux, Center for International Education, University of Massachusetts, Amherst, Massachusetts, 01003, U.S.A. (U.S. $2.00).

On File at ERIC

Among recent entries in the Educational Resources Information Center (ERIC) files are a discussion of issues in communication development, and bibliographies on mass communications in Asian countries.

- Heiskell, Andres. *The World of the Word*. Paper presented at the Public Relations World Congress, Boston, Massachusetts, August 1976, 22p. (ED 147 854).

  Stressing the potentially enormous power of new communication technology and the need to use this power cautiously and wisely, this paper considers the use of communication satellites, the conflict in developing countries between the concepts of free communication and the need to protect a people or a culture from harmful outer influences, the occasionally disastrous results of transferring television instruction from one country to another, the importance of considering the costs of communication technology, possible dangers of one-way flow of information and the desirability of establishing two-way communication, and two experiences in obtaining direct telephone response from television audiences. Available from EDRS in microfiche for $.83 or in photocopy for $1.67.

- Espejo, Christina Y. and Guy de Fontgalland, editors. *Mass Communication in Singapore: An Annotated Bibliography. Asian Mass Communication Bibliography Series 6.* 1977, 70p. (ED 149 367).

  Yu, Timothy L.M., compiler. *Mass Communication in Hong Kong and Macao: An Annotated Bibliography. Asian Mass Communication Bibliography Series 3.* 1976, 43p. (ED 149 368).

  Mass Communication in India: An Annotated Bilbiography. Asian Mass Communication Bibliography Series 2. 1976, 230p. (ED 149 369).

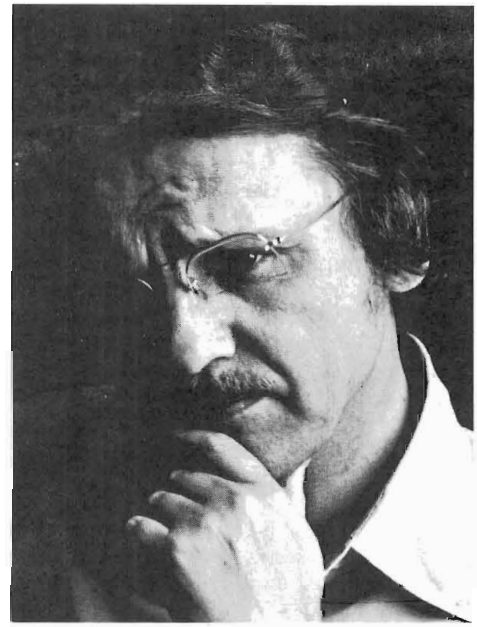
  Yang, Shou-Jung, compiler. *Mass Communication in Taiwan: An Annotated Bibliography. Asian Mass Communication Bibliography Series 5.* 1977, (ED 149 370).

  All four were published by and are available from the Asian Mass Communication Research and Information Centre, 39 Newton Road, Singapore 11, Republic of Singapore. Prices vary: The collection from Singapore is $10.00. The bibliographies are also available from EDRS in microfiche only for $.83 each.

Documents available from EDRS can be ordered from ERIC Document Reproduction Service, P.O. Box 190, Arlington, VA 22210, U.S.A. Order by ED number and enclose payment for the price listed plus postage. For information about ERIC, write to the ERIC Clearinghouse on Information Resources, School of Education, Syracuse University, Syracuse, New York 13210. U.S.A.

■ *Barbara B. Minor, Publications Coordinator, ERIC*

An Interview with Andreas Fuglesang



DCR's editor spent the morning of June 26 in Geneva, plying communication consultant Andreas Fuglesang with questions about the new U.N. Audio-Visual Information Center on Human Settlements — Vision Habitat. Willing his own ease amidst a basement jumble of shipping cartons and the nerve-rattling jangle of phones, he managed to give forthright and thoughtful answers to less than systematic questions. A few of each follow.

Kathleen Courrier: Whose idea was Vision Habitat?

Andreas Fuglesang: The notion of regionalizing communication resources eventually dawns on just about anyone involved in education and information activities, especially those in the developing world, and it is clearly in line with the U.N. General Assembly's resolution on human settlements. Vision Habitat itself, as the name suggests, harks back to the U.N. Environment Conference of 1972. In Stockholm, the Canadian delegation proposed using film as primary documentation for a conference on human settlements, which it offered to host.

KC: What happened between the Stockholm and Vancouver conferences?

AF: Plenty. First UNEP came up with the necessary funds, which have since been supplemented by Canada's International Development Agency. Then, starting in September of 1974, A-V advisors — some 30 in all — paid visits to the member states to encourage the local production of interpretative film statements on human-settlements demonstration projects. The idea was to get countries' self-produced self-images. These visits, along with regional workshops held in Mexico City, Bangkok, and Addis Ababa brought the desired results — 100 commitments for locally made "insiders" films.

KC: Were all hundred films made?

AF: Actually, by June of 1976, 240 films on various human settlement problems from 132 government and international organizations had been submitted. At Vancouver, the films were shown to committees and, on request, to individuals.

KC: How were the films received?

AF: Well, naturally there was some redundancy since habitat-related problems are widespread. But the overall reception was such that to shelve the films at the close of the conference would have made no sense at all. That feeling led to plans for systematically circulating the best of the lot.

KC: So, Vision Habitat in a sense represents the circulatory system?

AF: In part. Vision Habitat actually consists of six regional film-distribution centers: Nairobi, Dakar, Bangkok, Mexico City, Geneva, and a sixth center located in a Middle Eastern city. Vancouver serves as headquarters and as the North American regional office. Each center has a regional inventory that includes in their original languages all the films submitted to the Habitat Conference. In addition, about 80 films of general or international interest are on hand at each location. These 80 core films are available in French, English, Spanish, and Arabic.

KC: How are these film inventories used?

AF: In training, planning, and educational activities related to human settlement problems. The hope is that government employees and field-workers and others engaged in development work will make up the viewing audience. Some of the films are too sophisticated to strike a villager as anything but curious, but they do have the power to turn around bureaucratic thinking and to give mid-level development workers arresting pictures of the real-life consequences of and solutions to the problems of inadequate housing, poor sanitation, etc. They are eye-openers.

KC: But if the eye is open, does the hand necessarily move?

AF: No. Films alone certainly can't solve human-settlement communication problems, much less the human settlement problems themselves. But the national actions generated by means of and connected with films can make a dent. Besides, the centers are not merely film libraries.

KC: What else goes on at the regional offices?

AF: Well, for one thing, at every center is a trained animator who travels the region, keeps its pulse, and acts as an advisor on communication problems. For another, regional communication clinics and competitions are in the works. The Geneva office also publishes a heavily illustrated newsletter on ways to spread awareness and knowledge of human-settlement issues.

KC: It sounds as though your first allegiance is not necessarily to film itself?

AF: Not at all. Films partially substitute for personal communication. The loss of quality is compensated for by the gain in quantity . . . it's purely a question of the local optimum mix. Film has its advantages; it is closer to reality than some other media are because it provides both audio and visual stimuli. But when something else works better than film, and that usually means a media mix, then we use something else. My business is to find ways to communicate information and ideas needed to solve basic human-settlements problems, not to advocate the use of a particular medium.

KC: Your flexibility must itself create some problems . . . or at least complications?

AF: Not the way I see it. The chief problems we are up against are related to inflexibility. Two examples ought to make my point. One problem we're having is getting films across national borders; all kinds of idiosyncratic regulations stand in the way. Another is getting films, which provide primarily qualitative data, accepted as valid evidence by a research community brought up on numbers.

This last problem is especially troubling. Besides being almost impossible to collect, precise quantitative data are expensive and of little practical worth to local decision-makers, who either aren't able or don't care to use it. We have appropriate technology and now, as far as I am concerned, we need appropriate methodology.

KC: And appropriate communication?

AF: And appropriate communication. Most likely, nothing can beat person-to-person contact, but for now we have to content ourselves with next-best means, means that have not been depersonalized completely. As a step in that direction, we are sponsoring a series of photo, TV, film, and scriptwriting competitions in each region. We hope to ferret out new talent, to encourage low-budget uses of media that are typically and unnecessarily associated with advanced training and exhorbitant outlays of cash, and to come into the possession of programs and pictures that we can use at the grassroots level to make people aware of the dimensions and repercussions of problems related to human settlements. We're especially interested in documenting and promoting self-help programs and popular participation.

KC: How can *DCR* readers get information about these contests and obtain entry forms?

AF: By writing to VISION HABITAT, Field Coordination Office, Rooms E47-49, Palais des Nations, 1211 Geneva 10, Switzerland. Incidentally, a free subscription to *Vision Habitat News* can be had by writing to the same address.

KC: Would you like to end on that practical note or on another, loftier, one?

AF: Actually, I have a few parting words in store. As communicators, we have to be ever mindful of the fact that it hurts to be underdeveloped. That means that we have to take care to avoid giving people the feeling that what has gone before is bunk because that feeling hurts too. I think it helps to think of communication work as helping people cope and of coping as something most of them know something about. After all, villagers the world over have survived on the strength of that ability for thousands of years. ■

Vision Habitat's Contacts

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Toward The Definition Of Broadcasting Training Needs — Some Systematic Questions

Adapted from Chapter 5 of Training for Broadcasting in Asia (AMIC, 1977) *and reprinted with the permission of the Asian Mass Communication Research and Information Centre, Singapore*

The following questions are intended to help those in charge of broadcasting in developing countries identify the kinds of alternatives that must be considered in the course of making operating assumptions explicit. Together, they represent an attempt to structure a huge problem, that of assessing training needs, not to fish for "right" answers.

I. An Inventory of Questions

A. What is the nature of your communication institution?
1. What are its aims and goals? Who determines these?
2. Where does your institution stand in the power structure and what political and other constraints act upon it?
3. What are your physical and financial resources? Current? Near future? Long-term?
4. What are your personnel resources? Now? Near future? Long-term?
5. What physical and financial resources do you need to do an effective job? Now? Near future? Long-term?
6. What personnel do you need? Now? Near future? Long-term?
7. What is your present training situation? How many cycles of training now in operation? How many trainees returning?
8. What anticipated changes related to expansion or technology could affect future personnel needs?

B. What hard background data are available on your institution's social role?
1. What are the chief features of your society? Rural-urban? Regional differences? Racial-ethnic-religious differences? Class-status differences? Political affiliations?
2. How far does your broadcast coverage extend? What is your technical reception quality?
3. What special function does you station serve in the total information flow in your society? Will this change?
4. What is the composition of your audience? Its location? Listening-viewing habits?
5. What do you know about your acceptance and credibility compared to that of other media?

C. What are your institution's training needs at the various levels?
1. In what areas are your major needs? Planning? Management and administration (including promotion)? Creative personnel — writers, producers? Technical and maintenance personnel? Researchers and evaluators?
2. Where can various levels of training (introductory, mid-level, advanced, retraining, continuing, managing) be most efficiently obtained? In the system? Elsewhere in the country? In the region? Overseas?
3. What problems related to language or equipment could be solved by regional or overseas training?
4. Which levels or positions in your organization should be filled by university-educated personnel? By technical-school people?

D. What forms of training will best meet each of your needs?
1. What duration? Short-term? Medium term? Long-term?
2. What group structure? Individual? Small group? Large group?
3. What about trainer-trainee contacts? Personalized training? Distance or extension training?
4. What are the training priorities? Emergency? Accelerated crash? Regular?
5. What method is best adapted to each need? Lecture? Discussion? Audio-visual? Case studies? Laboratory? Simulation? Guided experience? Programmed instruction? Observation tours? Seminar workshops? Readings?

E. What academic disciplines are relevant to your training needs?
1. Which social sciences?
2. Which physical and natural sciences?
3. Which humanities?

Individual answers to the above questions will doubtless suggest some combination of broadcaster-sponsored staff training and of the use of existing educational institutions. Because trainers, facilities, and financial resources are almost always in short supply, cooperation between academic and non-academic institutions is likely to be mutually helpful. The borrowing of personnel (from universities and trade schools) and the sharing of facilities can help bridge the gulf between scholars and practitioners.

Twelve people made up the study group that developed these questions: Khidr Al-Sha'ar, Syria; R. Balakrishnan, Malaysia; Bert Cowlan, U.S.A.; Mrs. Lourdes Dagdag, Philippines; Alex Edelstein, U.S.A.; Christian Grote, Singapore; Everold Hosein, Jamaica; Leslie Sargent, UNESCO; Ms. Maria Luisa Tuason, Philippines; Mrs. Norma Martinez, Philippines; Wolfgang von Fumetti, Indonesia; and Wong Soon Chong, Singapore. Bert Cowlan and Leslie Sargent acted as reporters.

Part II, "Toward the Definition of Broadcasting Training Needs — Some Tentative Answers," will appear in the next issue of DCR. ■

A Communicator's Checklist

1 "We set out to study the promise held out for broadcasting both by the aid-givers and by the receiving nations themselves and to compare this promise with the performance of the broadcast media," reads the preface to *Broadcasting in the Third World — Promise and Performance*. "And to coax whole truths from birds and little fishes?" the seasoned researcher resists quipping.

Had Elihu Katz and George Wedell been anything less than indefatigable and aware of both their own predispositions and the pitfalls of their craft, their book would have become a catchall for expert opinion and suggestive statistics. But since they prove themselves methodical to a fault and tolerant of ambiguity, how can the invitation to weigh *their* promise against *their* performance be turned down?

Katz and Wedell embark, as they put it, "on the morning after." Investigating the process whereby broadcasting and broadcasting institutions take root in the foster soil of developing countries, they begin by sizing up some accomplished facts. The clincher is that broadcasting's moment of glory — the crest of the independence movements of the sixties, when nation-building was tantamount to the Lord's work and the word equalled the deed — has passed.

Four other themes, the two say, also permeated the researchers' discussions at large. First, LDC governments are increasingly mindful of popular movements and of the costs of denying movement spokespeople access to the mass media. Second, new-found wealth in the form of oil revenues gives some LDC countries the opportunity to shout down the BBC or Radio Moscow and to get their versions of things into broadcasting annals and across national borders for the first time. Third, feeling runs high that champions of the "free flow of information" must make their peace with cultural protectionists if feudalism is not to overtake international cooperation as one of mediated communication's first principles. Last, television has yet to find its place, much less to prove its worth, in the rural Third World.

That these four assumptions range from the inarguable to the incendiary gives us pause. More than that, healthy doubts about the premises help us read this book with eyes open wide enough to take in all eleven case studies and the full implications of the three focal points of the investigation: the media's impact on national integration, on socioeconomic modernization, and on cultural creativity.

Katz and Wedell approach broadcasting from the vantage of the policymaker, giving shorter shrift to the "the varieties of structure, control, or performance." They claim that the policy concerns of integration, development, and cultural sovereignty ideally emerge in predictable sequence but actually arise in response to skittish political cues. Often, though, the ideal is the actual. In such cases, the new nation presumably devotes itself first to the cause of post-colonial political integration, expanding the media's reach and dedicating broadcast time to promoting national priorities and leaders. Next, the emphasis shifts to socioeconomic, educational, and technical development. At this stage, the mass media are used to communicate both the essential goals of the new nation's development plan and household hints for realizing them. Finally, the media are used deliberately to promote or, by default, to demote traditional culture.

The decision to deploy the mass media for development — Is it the decision to let tradition take the hindmost? Katz and Wedell air the views of Clifford Geertz, Daniel Lerner, and others who say that the mass media are perforce agents of modernization, but they temper that view with evidence that the passifying influence of the media is more or less concordant with the values of some cultures. *Caveat emptor* they would say if they were selling — which they are not.

This same cautious realism informs the chapters on the development and transfer of broadcasting structures, technologies, and institutions. Close to half the text is taken up by the thorough, if uninspired, exposition of the relative advantages and disadvantages of various broadcast bands, media, systems, and norms in different parts of the developing world. This exercise in classification and comparison spawns a few useful axioms, an historical perspective of sorts, and a tentative feel for what will send some broadcasting institutions and technologies into the waxworks while propelling others into the next century (unmanageable and manageable complexity, respectively).

Readers will likely value in these middle chapters the outlines of the legacies of, say, the British broadcasting model versus the French prototype. They may blush, however, to be reminded that "it is not unknown for persons to be appointed to management posts in broadcasting whose political reliability exceeds their managerial competence." In all, they will find a puzzling mix of insight and pap.

The title chapter, "Promise and Performance," is the book's mainsail. It too is a blend of incisive interrogation and blunt declaration, but the pitch here is forward as well as outward. The authors return, none too soon, to the questions they set about to answer. They range wide, contending that the media's part in the modernization process can be neither dismissed nor writ too large, that the mass media are best used in support of ground-level change and not as its purveyor, and that the reverse side of the media's ethic of glamour isn't necessarily a revolt along the lines Marx described. In what may be the book's high point, they also grapple with the tension between cultural continuity and cultural change — a provocative discussion that cannot be summarized without inadmissible losses but that winds up swinging on Geertz's distinction between "essentialism" ("moving with the present") and "epochalism" ("holding an inherited course").

Katz and Wedell's last words ring practical. Relying on their case studies and their knowledge of deserving experiments, they suggest new uses for radio and TV, some of them posited on fresh conceptions of the media. Could TV be considered a collection of components instead of a package technology? Can the counterproductive distinction between entertainment and education be dissolved? Can broadcasting's role be reassessed in light of fuller knowledge of economic, political, cultural, and social constraints that affect it?

If the answers to these questions are not served up, at least the questions themselves have taken on cleaner edges thanks to Katz and Wedell. Indeed, for all its appendices and notes, this book is at bottom an acid bath for the often dull analytical tools of the trade.

Broadcasting in the Third World — Promise and Performance can be obtained for U.S. $15.00 from Harvard University Press, 79 Garden Street, Cambridge, Massachusetts 02138, U.S.A. ■ *K.C.*

2 Fostering Technical Cooperation among Developing Countries (TCDC) is a function of the United Nations Development Programme. The TCDC Special Unit, through its Information Referral System, has gathered information relating to the technical capacities of the developing countries in its *Directory of Services for Technical Co-operation among Developing Countries*. Eight hundred and fifty organizations in 67 developing countries supplied this directory with information on their services.

Listed alphabetically are national and regional organizations in the developing world. Also featured is a section on the technical services offered by the United Nations family. Information on these services includes that on the specialized field and research capabilities of the organization, the form and language of the cooperation offered, available fellowships and consultancies (if any), and the arrangement of finances. The entry for the National Media Production Center of the Philippines, for example, mentions short-term technician training in "various aspects of media operations (planning and production of print, radio, TV, film) . . . ," lists the courses offered in English and Filipino, outlines the kinds of research the center engages in either jointly or on contract, describes the center's technical

facilities, and makes reference to government fellowships and extension services. This kind of brief resume of the organization serves as an invaluable reference, much more useful than the all-too-common computer print-outs that almost defy human use.

Encouragingly, this publication is identified as Number 1. From this we can infer that there will be periodic up-dates. Given such a listing, one cannot help wondering how many existing organizations were not caught in the information net on the first throw. Since the distribution of TCDC's questionnaires was left up to the governments of the developing countries, were private organizations passed over? If so, will this oversight be corrected in subsequent listings? In the meantime, this publication will provide a clear, systematic, and unique source of long wished-for information.

The Directory of Services for Technical Co-operation among Developing Countries is available for U.S. $10 from TCDC Special Unit, United Nations Development Programme, 1 United Nations Plaza, New York, N.Y. 10017. ■ *J.B.*

3 Prepared for USAID, *Media in the LRCBCES Program* is "a survey of literature and experiences of nonformal community-education activities involving specific uses of media for various educational/informational uses" and constitutes yet another dictionary of development-communication alternatives. While it does not claim to be comprehensive, it does in fact cover the field adequately. Reiterating the basic advantages of instructional technology and offering once more the rationale for applying it systematically, the report includes a review of each major instructional technology system.

If the report is biased, it favors appropriate technology. Indeed, one of the few value judgments made in the report reads:

> A new concept, 'appropriate technology' thus seems a more suitable alternative than present models to guide applications of media in developing-country nonformal education.

Chapter II, "The Systematic Approach and the LRCBCES Project," makes interesting reading for practitioners in search of new planning ideas. The discussion of programmed and modularized learning takes these concepts out of the chemistry lab and puts them in the context of community education.

The report is a useful checklist of concepts, applications, and technology systems. It contains no new research judgments or strong stands on the comparative merits of different systems. Its greatest harm is supporting yet another officious and, in this case particularly unpronounceable, acronym, LRCBCES (Learning Resource Center Based Community Education System). When will it stop?

Media in The LRCBCES Program, written by James W. Brown for the San Jose State University/Agency for International Development Project can be obtained from the author at San Jose State, San Jose, CA 95114. ■ *W.S.*

4 The significance of *Rádio Educativo no Brasil: Um Estudo* depends on one's vantage. To a Brazilian, its publication four years after the completion of the analytical work on which it is based signifies a renascent official interest in educational radio. Since the mid-1960s, when the *Movimento de Educação de Base* (MEB) came under fire from those who feared the possible consequences of its message of peasant "liberation" in the Northeast, educational radio has taken a back seat in Brazilian planning to more technologically appealing television-based programs like SACI, ETV in Maranhão and Ceará, and the Brazilian Center for Educational Television Foundation.

For planners, the book has a broader meaning, nonetheless important for the fact that the volume is in Portuguese. Like many other countries, Brazil has a multiplicity of educational radio programs, the characteristics of which vary. To make some sense out of this mix, and to enable national planners to relate it to national development goals, a study of five major programs was undertaken in 1971-72. Originally, it was seen as one contribution to a larger program of the National Council on Human Resources known as the Advanced System of Educational Technology (SATE). SATE, however, was short-lived, replaced in 1972 by the National Program for Tele-Education (PRONTEL).

Lacking any model for such a survey, the study team first had to agree on one. A simple input-process-output model, in which input was defined as the entire national population, was chosen. Arguably, the clientele for radio education programs is in fact much more limited, but Brazilian educational policy is inclusive and an official study could not exclude any potential audience.

Six process "levels," or functions, were also identified: production, transmission, reception, staff development and training, and research and evaluation. Each of these, in turn, was seen as affected by financial, human, material, and technical/pedagogical resources. For example, at a given time the research and evaluation component could hypothetically be well financed, well equipped, and staffed by a small number of highly competent individuals. Such a combination of variables could result from the infusion of outside R&E funds into an operational program that traditionally neglected R&E.

The five programs studied were the *Movimento de Educação de Base* (MEB), a national, private, nonformal adult-education program run primarily in the North and Northeast; the *Fundação Educational Padre Landell de Moura* (FEPLAM), which broadcasts both certifying and nonformal programs for adults in the southern state of Rio Grande do Sul; the *Fundação Padre Anchieta,* a São Paulo-based operation resembling FEPLAM; the *Instituto de Radiodifusão Educativa de Bahia* (IRDEB), which concentrates on formal school equivalency courses in Bahia; and the *Projecto Minerva,* a national official program primarily concerned with equivalency courses broadcast by commercial stations (which are legally obligated to transmit a specified number of hours of educational programs).

The book contains brief summaries of the history, organization and administration, and objectives of each agency. These summaries are followed by sections organized according to functions and variables, while a subsequent section organized by agency represents the integration of the other parts. A final chapter, perhaps unduly negative, consists of conclusions and recommendations.

Fairly predictably, given the impetus for the study and the tendency of national planners to want to "rationalize" situations, the study's conclusion is that too many efforts were isolated and uncoordinated. More significant are the observations on resources. Most (including staff training) were found to be precariously funded, poorly accounted for, and subject to inadequate budgeting procedures — all of which made meaningful statements about costs difficult to make.

Some conclusions on production seem quite arbitrary (e.g., "The classes are too short."), but they at least manifest a concern often lacking at the planning levels — program quality. Similarly, the points made about transmission, which mainly concern scheduling, reflect a healthy interest in making programs available to neglected audiences. Reception was found inadequately organized or controlled, turnover of local monitors too high, and supervision sporadic.

The comments on planning and research are particularly telling. "With rare exception, exploratory studies to serve as a basis for planning are not performed . . . the programming transmitted is not of a priority nature . . . the programming (is) not a response to the necessities of the target populations." Furthermore, "Advantage is not taken, probably due to lack of knowledge, of international experience in the sector, with the exception of MEB." (MEB, it is worth noting, belongs to the Latin American Association of Radiophonic Schools, whose members share information and some programs.)

Many of these familiar-sounding findings will no doubt be corroborated by similar surveys, such as the study of educational broadcasting in the Commonwealth Caribbean planned for fall 1978. In the meantime, the publication of this volume represents a useful contribution both to the design of such surveys and to the literature on Brazilian education. Advantage of the record of this experience should not be seized by Brazilians only.

Radio Educativo no Brasil: Um Estudo can be obtained (in Portuguese) from IPLAN, Edificio BNDE, 11° Andar, SBS, Brasilia, Brasil.

■ *Peter Boynton, Academy for Educational Development*

5 *Teaching Nutrition in Developing Countries or The Joys of Eating Dark Green Leaves*, edited by Kathryn W. Shack, should, as its subtitle and equally imaginative cover picture promise, spark by example the creative impulses of nutrition educators throughout the developing world. Compiled here is a potpourri of practical as well as innovative techniques and methods from 18 authors' own experiences, first reported at a "Meals for Millions"-sponsored workshop in June, 1977: a traveling-minstrel health campaign in Malawi based on such hit-parade tunes as "Brush the Flies from your Baby's Eyes" and "Groundnut Flour"; the use of Madison Avenue techniques in 60-second radio spots to "market" nutrition in the Philippines; a food-classification system based on the staple or "cultural super food" instead of traditional food groups; evaluation guidelines presented via a model that measures Knowledge, Attitudes, Behavior and Improved Nutrition Status (KABINS).

Amid a general celebration of "The Joys," some discordant notes are sounded. "Despite the fact that nutrition education has been an ongoing program in the (South) Pacific for the past 25 years, no tangible results have been reached." A rural mass-communication campaign in India "increased awareness but it did not change people's food habits." And in introducing her adaptation of Paulo Freire's methodology, Therese Drumond reminds us that while "it is natural to want to know little tricks which will help us get across information . . . you and I know this is not the major problem."

Somewhat disquieting as well is what the authors don't say. Program impact is generally addressed only through anecdotal comments; and testimonials as a measure of program success cannot compare with improved nutritional status. One suspects that beyond a lack of quantifiable data (discussed in the chapter on evaluation), the results, if available, might not be heartening. These presentations perhaps reflect a malady that has long afflicted nutrition-education efforts: the lack of a context in which emphasis falls on both the availability and affordability of food, as well as on basic health services (the three needed parameters for nutrition-education programs and evaluation).

Such lacks may well be remedied as "Meals for Millions" moves beyond its "first effort" and should not overshadow the book's contribution to the Foundation's hope of serving "as a useful clearinghouse of ideas on the 'how' in nutrition."

In summary, this appreciably readable 'how to' manual on nonformal nutrition-education activities is of interest and utility to nutrition practitioners, whether national planners, program managers, or field-workers.

Teaching Nutrition in Developing Countries or The Joys of Eating Dark Green Leaves can be mail-ordered from MMF, Nutrition Education Books, Drawer 680, Santa Monica, CA 90406 U.S.A. for $U.S. $4.00 ($7.00 if foreign air mail).

■ *Sandy Callier, Food and Nutrition Unit, Ministry of Planning, El Salvador*

WOMEN AND THE MASS MEDIA

Responding to recommendations formulated during International Women's Year, UNESCO has funded a study of inter-relationships between the roles of women and those of the mass media. The project, a comprehensive and analytical worldwide survey, will cover past and current research, training, action, and lobby programs related to the role and position of women *in* the media industries and to their portrayal *by* the media. In addition, the personal experience and viewpoints of those who have written or thought about the issues or produced programs on them will be incorporated.

The project is designed to go beyond simple description, or even historical analysis, and to suggest policies and action directed at development and social change. The results will form the basis of a working paper for the UN/UNESCO Seminar on Women and the Media planned for March of 1979.

DCR readers are encouraged to apprise the project director of

- current or previous research projects
- programs in training, production, development, or the creation of information networks and syndicates
- lobbying programs (i.e., those directed at influencing media policy or output)
- names of potential contacts in the field
- relevant personal comments or experiences

In return, the director promises to share the conclusions and outcomes of the project with contributors. Write to Margaret Gallagher, Audio Visual Media Research Group, Institute of Educational Technology, The Open University, Milton Keynes MK7 6AA, ENGLAND.

THE VIÑA CONFERENCE PAPERS

To cap a series of 11 national seminars on Technology Transfer in Education, the Organization of American States sponsored the first Inter-American Seminar on this subject in Viña del Mar, Chile, last May. The five-day meeting was held to summarize the recommendations of the national seminars, to provide a forum in which to present working projects, and to explore the need for a regional center for use by all OAS states for research, evaluation, and information dissemination.

A number of the case studies presented demonstrated various applications of technology to education. These included the Radio Math Project in Nicaragua, Radio Shuar in Ecuador, Brazil's SACI satellite project, Costa Rica's new Open University, El Salvador's Educational TV, and several innovative university-level training programs.

In the discussions of technology transfer, it was clear that the concerns of participants were not focused on technology hardware, but on its thoughtful implementation to assure the cultural integrity of each country. It was equally clear that although each country must generate an education-technology policy suited to its needs and aspirations, participants agreed that sharing experiences and information was necessary to avoid duplication and to strengthen individual efforts.

A list (TTE/doc. 1/78) of the seminar papers that are available (in Spanish) can be had from the OAS Department of Educational Affairs, Room 925, 1735 Eye Street, N.W., Washington, D.C. 20036 U.S.A.

DATA ON EDUCATIONAL RADIO & TV

UNESCO plans to compile comprehensive case studies on applications of educational radio and television. To be published during UNESCO's next bi-ennial, these case studies will reflect a worldwide data-gathering effort.

Address questions or submit information related to the project to the following regional project coordinators:

Senor Arturo Matute
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WEST INDIES SATELLITE DEMO & REPORT

Rural-development workers and small farmers from several Caribbean island nations met on St. Lucia in March under AID auspices to discuss their development concerns via satellite. They attended a week-long series of seminars at the University of the West Indies' extra-mural center at Castries, St. Lucia. During these sessions, participants spoke via satellite with resource people at UWI campuses in Mona, Jamaica and in Bridgetown, Barbados. Representatives in St. Lucia and Barbados watched their Jamaican colleagues on a TV screen and talked with them using NASA's ATS-6 and ATS-3 experimental satellites.

This outreach activity formed part of a ten-week satellite demonstration sponsored by AID to link two of the University of the West Indies' eleven campuses. The satellite link was available three mornings a week for lectures, seminars, and teleconferences between Jamaica and Barbados. As part of this project, special conferences via satellite have brought together experts from other West Indian agencies to discuss rural medical care, integrated rural development, techniques for teaching the deaf, and other topics of shared interest. The satellite demonstration featured a tele-conference between UWI faculty members and experts from the Solar Energy Research Institute at Golden, Colorado. The U.S. solar energy panelists spoke from Denver using a nearby satellite earth station. Another teleconference — this one using sound only — was held via satellite between the UWI and the University of the South Pacific in Suva, Fiji.

UWI officials, impressed by the benefits of the satellite demonstration, asked for and received a three-month extension on the ATS-3. Over the summer they investigated additional audio-only applications and explored satellite communication's potential for helping them serve their Caribbean member nations better.

For more information on this demonstration and AID's other satellite projects, contact Dr. Clifford Block, Associate Director for Educational Communications Technology, DS/ED, Room 320-D, USAID, Department of State, Washington, D.C. 20523 (Telephone 703/235-9062).

CALL FOR COPY

Videotape applications and experiments, innovative literacy efforts, the use of the media in skills-training activities, health-information campaigns, and development-communication projects in urban settings are some of the topics slated for coverage in upcoming issues of *DCR*.

Readers are encouraged to submit articles on these and related subjects to the Editor, who also welcomes photographs and case studies.

DCR READER SURVEY

Well over 500 *DCR* readers have returned the questionnaire sent out with Issue 23. The results, now being tabulated, will influence the evolution of the newsletter's style, format, and content.

Readers who have not yet filled out the form are urged to do so. Respondents will automatically receive CDC's Information Bulletin No. 9, '*Mtu Ni Afya* — Tanzania's Health Campaign," by Budd L. Hall.

APPROPRIATE TECHNOLOGY

Two British and two international organizations are supporting the study of small-scale, inexpensive communication systems for the Third World. From June through December of 1978, a survey of a representative range of small communication systems that provide either general or specific services is being conducted. The second stage of the effort is intended to consist of one or more pilot projects based on models identified during the survey.

DCR readers are encouraged to forward information to the survey-takers on all aspects of project history, operation, and policy: staffing and staff-training, organization and control, relations with national bodies, technical standards, equipment procurement, the potential for manufacturing equipment locally, and background information.

The rationale for this two-part project derives from Fritz Schumacher's *Small is Beautiful,* and the project coordinators attach singular importance to the advice and participation of those in the Third World, among whose number are many of the project's chief advisors.

To get or give information on affordable communication options, write to Richmond Postgate or Peter Lewis (Appropriate Technology in Communication, 42 Store Street, London WCIE 7DA ENGLAND).

A.I.D. SATELLITE REPORTS

A limited number of free copies of the following reports, all issued as *A.I.D. Studies in Educational Technology,* can be obtained from the office of Dr. Clifford Block (DS/ED, Room 320D, SA-18 AID, Agency for International Development, Washington, D.C. 20523, U.S.A.):

Telemedicine: Some Findings from the U.S. Experience, by Heather E. Hudson

ATS-6 Satellite Experiments in Health, Education, and Telecommunications, by Robert T. Filep and Patricia A. Johansen

Costs and Satellites: Implications of the ATS-6 Demonstration, by Steven J. Klees and Stuart J. Wells

The Hermes Communications Technology Satellite Project, by Anna Casey-Stahmer

Public Service Satellites for Development, by Steve Porter

WOMEN'S NEWS NETWORK

Initiated in January of this year, UNESCO and UNFPA's joint project to create regional feature services and audio-visual banks on women and population has already borne fruit. OIM (Oficina Informativa de la Mujer) Feature Service for Latin America, under the direction of Argentinian journalist Mabel Itzcovitch of the Inter-Press Service in Rome, intends to produce and circulate some 200 articles per year on women's new roles, their social and familial status, and their participation in the development process. Some of the OIM features will be adapted for radio and disseminated through the Latin American Communicators for Development (in Bogotá) and all will be distributed through the IPS circuit.

Inquiries and contributions related to OIM should be addressed to Mabel Itzcovitch (IPS, Via Panisperna, 207, Rome, Italy). For further information on the worldwide UNESCO/UNFPA project and its proposed regional manifestations, write to Yvette Abrahamson (UNESCO, 7 Place de Fontenoy 75007, Paris, FRANCE).

EBI & THE *DCR* READER

A recent survey of the information needs of media professionals around the world, sponsored by USAID and conducted by Howard Leavitt, revealed that *Educational Broadcasting International* "is the single most frequently mentioned source of information about educational radio and television." In interviews with directors and managers of large instructional radio and TV systems in twelve developing countries, EBI was mentioned more often than UNESCO or the BBC.

Any select bibliography of periodicals testifies that researchers, writers, and Ph.D. students in the USA and elsewhere rely on *EBI,* and the journal is essential reading in communications and media courses. Of particular value to media practitioners and those whose interests take in Third World problems and developments, *EBI* also ranks as priority reading for the directors and staff of most governmental and independent TV and radio services around the world.

Recent issues of *EBI* have dealt in depth with such topics as Media and National Development (December 77), Communication and Perception (March 78), and Producing for Peak Time (June 78). Forthcoming issues will feature Media Economics (December 78), and Popular Theatre and Broadcast Drama (March 79).

EBI's editor, James Potts — formerly a film and TV producer, trainer and consultant in Ethiopia, Kenya, and Nigeria — invites *DCR* readers to write for a sample copy of the journal and for subscription details. Address correspondence to The Marketing Department, Peter Peregrinus Limited, Station House, Nightingale Road, Hitchin, Hertfordshire, ENGLAND. ■

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COMMUNICATION PLANNING — A FOURTH VIEW

In Issue 23 of Development Communication Report, *three contributors — two from the East-West Communication Institute and one from the Japan Broadcasting Company — gave their views on communication planning. In this article, Alan Hancock, who is Chief of Communication Planning and Studies in UNESCO's Division of Development of Communication Systems, in Paris, reviews their contributions and adds his own perspective. The viewpoint he puts forward is a personal one: while he describes the UNESCO program in this field, his opinions do not necessarily express an official UNESCO position.*

John Middleton's article, "Using Theory in Communication Planning," includes a succinct definition of communication planning, which will serve admirably as my text. He says:

"In my view, planning is the application of theory to reality, in order to reach decisions about what to do, when, and how."

In other words, communication planning includes not only techniques and outcomes, but also the planning process itself; it is as much a matter of framing the right questions as of finding concrete results. And it is concerned, finally, with the realities of implementation; unless the decision-maker actually recognizes and acts upon the recommendations of planners, their work will be wasted, however innovative or logically sound it may be.

In many ways, the other contributors to the issue say the same thing. Kazuhiko Goto, for example, concentrates on another preoccupation of the field: the need to decentralize planning structures and to involve the recipients of planning in the planning process. George Beal and Peter Meehan emphasize the need to begin with a knowledge search that goes well beyond pure research, and to convert the available corpus of knowledge into a form that product developers and decision-makers can use. Out of all of this comes a sense that communication planning, if it is to have any significance at all, must emerge from the ghetto of theory and come to grips with the confusing variables of the real world. Middleton shows the growth of this line of thought most clearly in his discussion of planning theories. The basic approach is still that of systems planning, what Middleton calls the *rational-comprehensive.*

As an approach, rational-comprehensive planning is product-oriented; it is aimed at developing specific plans. But the more recent approaches to planning that Middleton describes stem from separate viewpoints. First, there is a new emphasis in some approaches upon the structural and psychological changes needed in both institutions and people to improve their capacity to deal with the planning process: the need to develop synthesizing and integrative skills. Second, recent changes in philosophical attitudes toward planning augur for the involvement of users more directly in planning processes. These shifts derive from a growing concern for the issues of access and participation, which have been felt in many fields other than communication. As Middleton himself says, these planning approaches are compatible; they can be integrated. But, unless we are clear about how they differ and about how the process of synthesis may take place, we run the risk, yet again, of alienating the practical planner. In short, if the planning debate is too rich, too diffuse, too dissonant, or too technical, the practical planner will simply disregard the variety of theoretical aids available and opt for experience whenever deadlines press.

It should help, therefore, to separate more clearly the different emphases of emerging planning styles. For a long time to come, it is my belief, the systems approach — the attempt to realize concrete results by logically establishing policies, translating these into objectives, quantifying whatever is quantifiable, setting measurable targets and behavioral outcomes when these can be envisaged, and relating all of these to strategies — will continue to be central to actual planning surveys. To reach specific conclusions, decision-makers need not only a translation of available data (as Beal and Meehan argue), but also a set of proposals, expressed if possible as alternatives, so that they can visualize strategy concretely and evaluate options comparatively.

The problem with the systems approach to planning is that it tends to be both centralist and inflexible. Modelled upon earlier forms of planning (especially economic and educational planning) that have in most cases reflected a centralized view of economic development, this approach has normally been taken by governmental economic planning boards or units. Too often, links with users in this process have been non-existent and links with decision-makers limited to those at senior levels. Basically, the new planning approaches are responses to the recognition of this limitation. Their proponents and users try to avoid linearity by building evaluative processes into planning designs; they try to improve representation by making planning structures more open and improving feedback possibilities; they try to improve the learning capabilities of those entrusted with planning. In most cases, the approaches they take are experimental, custom-built for particular planning situations rather than universal.

Of course, some recent attempts have been made to improve the methodology of communication planning by integrating different theoretical bases — planning theory and development theory. Because the field can draw upon so many disciplines and tools, synthesis is the main problem here: the difficult tasks are to draw out the dominant strains in each and to identify common principles or techniques. To my mind, Middleton's call for the development of 'design' principles, cutting across the theories of development-communication experience and planning, must be taken up if we are finally to fuse these theories into an operational theory of communication planning. Indeed, the real problem is to continue to work in a flexible open-ended way, while still retaining continuity through regular reviews of a core program. Certainly, UNESCO takes this approach. UNESCO's program is deliberately diverse: it springs from the premise that the field of communication planning is sufficiently new and short of data to benefit from a variety of experiences, especially from well-documented process and evaluation studies.

UNESCO's general program includes a number of related strands. First, there are active planning projects, such as the communication-systems survey conducted in Afghanistan in 1977, which led to a proposal for an eight-year communication plan for the country. Second, UNESCO sponsors and conducts case studies of planning processes and systems at the institutional, program, and national levels. Relatively open-ended, these studies are designed to increase available information on planning in action. Third, UNESCO attempts to develop methodologies — to take accredited methods used by economists, educators, urban planners, and others, and to relate these to communications, in particular by applying them to simulated data on communication problems and systems. One of UNESCO's present interests is in compiling a communication-planning sourcebook (scheduled for publication in 1979) that will include specialists' essays on approaches to methodology, as well as an account of attempts by UNESCO itself (reinforced by field projects and workshops) to create an operational planning framework reflecting both systems principles and the planned involvement of decision-makers. Last, UNESCO cooperates in producing instructional materials. For example, a regional Asian workshop held in Malaysia in 1977 was based upon simulation exercises that are now being refined at the East-West Communication Institute for use in other countries.

These are the main strands, but as Middleton argues, many other fields and disciplines also bear on communication planning. Consider the study of technology in this light, for example. Experts (in both communication and in technology-transfer

research) who met in Paris in 1977 had available an analytical history of technology transfer and a preliminary survey (as an example of methodology) of broadcasting development in Sierra Leone. This first step is being followed by a project designed to link various institutions willing to follow a common investigative framework. Such studies clearly extend the range of communication planning by providing insights into the implications of communication decisions and into issues of dependency — be they cultural, political, or technological. Similarly, projects emphasizing access and participation in media production and management contribute to the development of the open and participatory models on which future planning likely depends.

The problem finally seems to be one of balance. At the present elementary stage of communication planning, we need a variety of experiences, from which we can draw relevant analogies. At the same time, we urgently require a body of theory that can be applied operationally. The two needs can be met eventually through interaction, provided we are careful not to commit ourselves, too early, to any one planning model. ■ *A.H.*

A Note On The Training And Visitation System Of Agricultural Extension*

Underlying the training and visitation system developed by Daniel Benor is the notion that farmers are the best diffusion agents of technology — a revitalization of the Model Farmer concept in use by the Comilla Academy in Bangladesh for 15 years without proven success. The training and visitation system entails the straightline hierarchical transmission of technological information through Contact Farmers (CFs), 10 percent of the farmers of a given working unit. The Village Extension Workers (VEWs), who receive one day of training fortnightly from their immediate superiors, pass information on to CFs via predetermined rotational face-to-face visits. The (dubious) assumption is that the CFs will in turn voluntarily pass on the information to the rest of the farmers.

Historically, the principle of using local leadership in planning and executing a development program in general and an extension program in particular has been incorrectly applied in Third World countries. In its name, a general policy of working through the so-called contact farmers, model farmers, supervised farmers, registered growers, cooperative managers, progressive farmers, veteran farmers, local influentials, lay leaders, etc., has been adopted. What thus happens in social systems of ascribed leadership is that a few officially "attributed" farmers flock around local development workers or extension agents, all of whom together form what may be termed *a social hard pan* that blocks the free flow of resources and advisory services to all farmers of the working units. Indeed, in the training and visitation system, the Contact Farmers are recognized and treated as the "Moyallem" (those who guide the pilgrims to perform Haj in Mecca) of extension work.

This process runs counter to the very goals of extension work — education for all. Whenever a few farmers monopolize all the resources and technological know-how, the poor become poorer and the rich grow richer. (Without recognizing this truth, some experts blame technologies for this undesirable outcome, taking up the slogan of "Appropriate Technology.")

*(*See DCR issue 23, p.8.)*

The adoption of improved practices should not be seen as a "a fire in the forest." Nor is it the case that A Tells B, B tells C, and finally X tells a farmer to adopt a practice, which he straightaway does. And it is not true that the mere existence of an innovation in the neighborhood will prompt nearby farmers to master and adopt it. No, instead farmers have to be repeatedly exposed to information so that they can hear, see, observe, discuss, try, and measure the benefits of the proposed change by themselves. This is best done by professionally trained and skilled extension personnel through pre-planned visits, office calls, group discussions, meetings, demonstrations, tours, miscellaneous publications, radio programs, etc., at unit, regional, and national levels.

The use of diversified methods is a must to suit varied clientele and extension objectives and to reach large numbers. In Benor's system, all these activities have been reduced to visitation. Yet, in my experience, repeated visits create suspicion. Eventually, farmers start fleeing from home through the back door when extension agents knock at the front entrance.

Most developing countries have no Extension Service. Most have only Agricultural Services that typically either sponsor no educational activities or sponsor too few to accommodate the clientele. Such agencies try mainly to channel some production inputs and to supervise their use by the farmers. In the absence of planned educational activities, the introduction of the training and visitation system may bring about short-term sporadic increases in production. It has, however, also delayed the evolution of an ideal extension system at a time when a growing number of national leaders are beginning to see the importance of building Extension Systems.

In my opinion, the adoption of the training and visitation system that now alledgedly affects some fifty million farm families in some of the world's poorest countries is due to its strong association with the well-received World Bank assistance program and to national decision-makers' lack of knowledge of extension and management systems — not to the system's intrinsic value.

■ *M. Hassanullah, Principal Extension Specialist, Bangladesh Sugar and Food Industries Corporation*

CDC PUBLICATIONS

Copies of the following CDC Bulletins are available free from the Clearinghouse:

No. 9 *"Mtu Ni Afya* — Tanzania's Health Campaign," by Budd L. Hall

No. 8 "Télé-Niger: Adapting an Electronic Medium to a Rural African Context," by Theresa Silverman

No. 7 "A Sourcebook on Radio's Role in Development"

No. 6 "A Directory of Sources of Assistance on Educational Technology," compiled and edited by Lois Joy Lester

No. 5 "Communication Media and Technology: A Look at Their Role in Non-Formal Education Programs," by Henry T. Ingle

No. 4 "Radio's Role in Development: Five Strategies of Use," by Emile G. McAnany

"El Papel de la Radio en el Desarrollo: Cinco Estrategias de Utilización," by Emile G. McAnany

"Estudios de Tecnología Educacional para el Desarrollo"

"Etudes sur les Techniques en Matière d'Education au Service du Développement"

CHILD HEALTH-PROMOTERS

Children can perform some of the preventive and curative functions of health workers and enjoy the tasks, says Dr. David Morley of the Institute of Child Health in London. His organization, in concert with London's Institute of Education, is acting on this notion by sponsoring a child-to-child health program in affiliation with the U.N.-designated Year of the Child (1979). Aimed at identifying and implementing health measures that children can learn in school and pass on to their families and neighbors, the program takes different forms in different locales.

A newsletter documenting various child-to-child health activities around the world can be obtained by writing the Program Director, Duncan Guthrie (Institute of Child Health, 30 Guilford Street, London WCIN-1EH, ENGLAND). General information on the Year of the Child can be acquired from the IYC Secretariat (866 U.N. Plaza, NYC 10017, USA, or ILO Building, Room 929, CH 1211 Geneva, SWITZERLAND).

PROFILES TRANSLATED

Project Profiles, brief descriptions of development projects that make significant use of the communication media, are published by the Clearinghouse at the rate of eight per quarter and are available free of charge. Sixteen of the more than 50 *Profiles* available have been translated into French and Spanish. Four *Profiles* are available in Arabic.

PROJECTS IN BRIEF

These project descriptions were written by Barbara O'Grady of the Academy for Educational Development using information submitted by readers in response to the Project Information Request in Issue 18 of DCR. *Future newsletters will contain four project descriptions an issue until the series is completed. The full series is available from the Clearinghouse upon request.*

POPULATION EDUCATION AND BIRTH-PLANNING STUDIES

Mr. A.R. Marsh
School of Education
University of Hongkong
Hongkong

Date submitted to CDC: May 23, 1977

FOCUS: The target audience of this project is leadership groups in medicine, social work, training, and teacher training in population and family planning. Through the project, information and resources for both formal and nonformal teaching are provided. The emphasis falls on using materials that require medium-to-low levels of technology, such as bilingual (English/Chinese) audio-visual resource packs, transparent plastic charts, radiographs, portable population clocks, and contraceptives.

SUBJECT AREAS: Population/Family Planning, Community Development, Education

TYPE OF MEDIA: VTR, slides, photographs, books, pamphlets, posters

TARGET AUDIENCE: Literate rural and urban adults and youth

SCALE OF PROJECT: National

PROJECT STATUS: Begun in 1973, ongoing as of 5/77. At the time of information request, evaluation instruments being designed

SPONSORING/COOP. AGENCY: Asia Foundation, Family Planning Association of Hongkong (and others)

COMMUNICATION TECHNOLOGY PROJECT FOR EDUCATION

Yusufhadi Miarso
Baden Penelitian dan
Pengembangan, Pendidikan dan
Kebudayaan
Department P den K,
Jl. Menteng Raya No. 23
Jakarta, Indonesia

Date submitted to CDC: September 28, 1977

FOCUS: Encouraged by the successful Educational Radio Pilot Project in 1974, the functions of this project (T.K.P.K.) were expanded to serve 11 provinces with multi-media components. The project stresses educational achievements relating to national development needs, using communication technology as a sub-system of education. Its primary aim is to educate a sufficient number of people to serve and manage the system, to create equal education opportunities, and, eventually, to open new employment opportunities. The project includes four National Implementation Units that have coordinating functions in research, development, training, and production, and 11 local units that have mainly feedback and utilization functions.

SUBJECT AREAS: Education

TYPE OF MEDIA: Cassette recorder, reel-to-reel recorder, radio, VTR, television, 8 and 16mm film, filmstrips, slides, photographs, simulation games

TARGET AUDIENCE: Literate, rural adults and youth

SCALE OF PROJECT: Approximately 2,000 villages; formal: 80,000 teachers; nonformal: an estimated 800 rural people in 1978

PROJECT STATUS: Project to run from 1974 through 1978

SPONSORING/COOP. AGENCY: Ministry of Information, Representatives of Local Authorities, Academic Institutions, and Interested Project-related Agencies

HIGH/SCOPE EDUCATIONAL RESEARCH FOUNDATION

David Fisk
Assistant to President for Latin America Program Development
High/Scope Foundation
600 N. River Street
Ypsilanti, MI 48197, U.S.A.

Date submitted to CDC: June 1, 1977

FOCUS: Founded on the developmental theories of Jean Piaget, this organization develops alternatives to traditional methods of training teachers and working with pre-school children. Program personnel collaborate with educators throughout Latin America and the United States in developing, evaluating, and disseminating innovative techniques, such as the integration of the components of early childhood education into projects (e.g., nutrition, health, community development) reaching needy children and their parents.

SUBJECT AREAS: Early Childhood Education

TYPE OF MEDIA: Cassette recorder, VTR, 16mm film, filmstrips, slides, photographs, newspapers, books, pamphlets (these media used in training teachers and working with parents, not in training children)

TARGET AUDIENCE: Literate and illiterate adults and youth, both rural and urban

SCALE OF PROJECT: National, village level

PROJECT STATUS: Begun in 1970, and ongoing as of 6/77. In implementation and evaluation stages (planning ongoing)

SPONSORING/COOP. AGENCY: AID, UNICEF, Peace Corps (and other private and public sector entities)

AFROLIT SOCIETY

Dr. Charles T. Hein
P.O. Box 72511
Nairobi, Kenya

Date submitted to CDC: May 23, 1977

FOCUS: Through seminars, consultant services, materials development, training, and publication of reports, technical papers and a quarterly newsletter, this organization focuses on integrated development, with adult literacy as a primary element. It provides professional training, urges the creation of African training opportunities, and fosters an exchange of information among literacy and extension workers. Multimedia cooperation allows specialists to learn each other's "language" and the constraints of each other's media. The program suffers from a lack of funds for following up seminars and for publishing reports on time.

SUBJECT AREAS: Literacy, community development, education

TYPE OF MEDIA: Cassette recorder, radio, two-way radio, VTR, television, 16mm film, filmstrips, slides, photographs, newspaper, books, pamphlets, posters, mimeo newssheets

TARGET AUDIENCE: Literate and illiterate adults and youth, both rural and urban

SCALE OF PROJECT: National — 243 members in African countries

PROJECT STATUS: Begun in 1968, ongoing as of 5/77

SPONSORING/COOP. AGENCY: Afrolit Society; Intermedia (NCCC) U.S.A.; WACC; UNESCO Literacy Division; NCCK (Kenya); AAEA; ACEA

FOLLOW-UPS AND EPILOGUES

DCR's editor invites all who have contributed articles to *DCR* and to its forerunner, *ICIT Report*, to submit one-or-two paragraph postscripts for publication in the newsletter's 25th issue. Welcome are second looks at projects, reconsiderations of issues and ideas, and news of both failures and spin-offs of experimental development-communication efforts. Readers so disposed may even use their allotted space to retract their original statements.

Address all inquiries, contributions, and suggestions to Kathleen Courrier.

INVENTORY OF HUMAN RESOURCES

As part of a two-year international study of para-professionals in rural development, Cornell University is making an inventory of programs and projects that use para-professionals. The researchers request readers of *DCR* to send information that will contribute to the inventory. Although names and addresses of agencies using para-professionals will be sufficient, additional descriptions and documentation would be welcome.

Responses should be sent to Dr. Royal D. Colle, Department of Communication Arts, Cornell University, 640 Stewart Avenue, Ithaca, N.Y. 14853, U.S.A. ■

THE SPREAD OF KNOWLEDGE & THE SPREAD OF DISEASE

Researchers at the University of Dar es Salaam have proposed carrying out a study whose results will hold equal interest for epidemiologists and communicators. The research objective is to trace the impact of Tanzania's health-awareness campaigns of the early 1970s on the victims of the cholera outbreak of 1977 and on the kin and neighbors of those victims. The results, it is hoped, will shed light on how adults retain, transfer, and apply new knowledge and habits — a process that the researchers say is poorly understood and seldom the focus of follow-up evaluation.

In addition to identifying the level of awareness of the causes and controls of cholera among Tanzanians at the time of the outbreak, the researchers intend to examine government efforts to control the disease, the effects of quarantine and other preventive measures, and the degree of inter-agency cooperation in the battle against the disease.

To receive information or offer suggestions related to this study, contact T.L. Maliyamkono, Senior Lecturer, Economics of Education, University of Dar es Salaam, P.O. Box 35048, Dar es Salaam, Tanzania. ■

YEAR OF THE CHILD

To observe the U.N.-designated Year of the Child — 1979, *DCR* will carry articles on development-communication projects aimed specifically at improving children's lot and on ideas for such projects. Leads, manuscripts, and suggestions will be gratefully accepted and promptly acknowledged.

Development Communication Report, published quarterly by the Clearinghouse on Development Communication, is distributed free to over 6000 development professionals.

A center for materials and information on important applications of communication technology to development problems, the Clearinghouse is operated by the Academy for Educational Development, a nonprofit planning organization, and supported by the Technical Assistance Bureau of the U.S. Agency for International Development as part of its program in educational technology and development communication.

Readers are invited to submit typed manuscripts of no more than 1000 words and to send in photographs.

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Dilemmas in Country X: Candid discussions about failures

Must faith be blind? The anonymous contributor of the following dilemma hopes not but entertains serious doubts about governmental development agencies' willingness to learn from their own mistakes.

(The editor invites readers to submit reports for this column. Author's names — as well as those of the people, agencies, and countries involved in the projects — will be withheld upon request.)

Fourteen years ago Country X gained its political independence. Condemning the neglect by the colonial regime, the new government launched a massive program to establish new schools at all levels and simultaneously declared war on illiteracy.

The approach Country X adopted was to call upon communities to organize literacy groups, accept responsibility for running them, and see that the literacy teachers were adequately rewarded. The literacy program was to be part of the general mobilization of the people for development through self-reliance and community service. For its part, the government undertook to provide all the necessary materials and a sufficient number of personnel to train and support the literacy teachers.

Shortly after the program was launched, demands that the government pay salaries to the literacy teachers arose. Four sources of pressure fed these demands. First, many of the literacy teachers were young schooled people who wanted salaried employment. Others were schoolteachers who helped literacy groups in their spare time. Both of these groups argued that since teachers in regular adult-education classes were paid full fees, so should teachers in literacy classes. In addition, the learners themselves felt it was not fair to expect free services from the literacy teachers. Last, the community leaders complained of the impossibility of screwing contributions from communities that were already poverty-stricken. (As an aside, we may record also that the university students declined to volunteer as literacy teachers unless each was paid an honorarium in excess of the salary of a full-time literacy organizer.)

Within a couple of years, these pressures grew strong enough to force a compromise. The literacy program would still not pay the teachers. Instead, if a community paid its own teachers, the program would double whatever the community raised, giving the money to the community's organization to hand over to the teachers.

Despite this compromise, however, the record of the volunteer teachers was such that thirteen years after the program was launched, war was declared on illiteracy again. The new campaign was to be part of sweeping national educational reforms. A reasonable person might expect that the strategy of the renewed war would take account of what went wrong in the old one. But, strangely, the war declarations scarcely refer to the previous battle. More surprisingly, they state that the entire new campaign is to hinge on reliance upon volunteers. The literacy teachers will be paid nothing for their services: commitment to the nation will be their sole motivation, the progress of their fellow human beings their sole reward. The literacy classes will be organized by community leaders, who will also dedicate their services on a volunteer basis to the nation and their fellow citizens.

Somehow, the disappointments of a decade have not destroyed the government's faith in community organization and voluntary service as reliable bases for national programs. Yet, the government brusquely ignores history.

Here is a dilemma for patriotic educators: how should they reconcile their loyalty to their learners — who will almost certainly be let down once again — with their loyalty to their government, whose sincerity it is inadmissible to doubt? ■

at issue . . .

Development Communication Report

Clearinghouse on Development Communication

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radio-based communication projects — standbys and stand-outs

development communication report

1414 22nd Street, N.W.
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20037 USA

January 1979
No. 25

Video & Micro-Teaching: Adaptable Medium, Adaptable Method

The elemental ingredients of the micro-teaching concept are 1) communication techniques, 2) the teach-reteach dimension, and 3) immediate feedback. The first dimension, communication techniques, reflects the assumption that the complex communication act can be broken down into relatively easily learned skills, a repertoire of which enables a person to communicate in a variety of situations. Listening, questioning, and closure are a few examples of such techniques.

The second dimension, teach-reteach, is a process whereby a person makes a presentation, receives and internalizes feedback on that performance, incorporates suggested improvements, and then redoes the presentation to analyze by comparison the results of the changes.

The third dimension, immediate feedback, actually has three aspects: 1) subject feedback, 2) videotape feedback, and 3) supervisor feedback. Subject feedback is that from the "client," who receives the presentation and the chance to express feelings about its strengths and weaknesses. Videotape feedback, in contrast, gives the presenter the opportunity to assess a completed presentation, to view himself as he actually appeared and to compare other types of feedback to the presentation. The third aspect, supervisor feedback, links the subject feedback and the videotape feedback: the supervisor assists the learner by suggesting strategies and alternatives and by helping plan for the reteach session.

A crucial aspect of the micro-teaching process is the self-confrontation facilitated by the use of videotape. Although videotape is fairly new on the educational scene, initial reports by researchers and educators on videotape feedback are optimistic. They suggest that specific and complex behaviors under the teacher's control can be changed by utilizing videotape feedback in various settings and that videotape feedback in the context of micro-teaching can help students perform significantly better in the classroom. Videotape feedback also possesses the demonstrated potential for increasing the accuracy of teachers' self-assessments.

On the other hand, some evidence indicates that videotape feedback can be stressful and demanding and that teachers' lack of receptivity to videotape feedback can reduce its effectiveness. Recent literature also suggests that when a person watches a videotape alone and without formal appraisal, dissonance (the difference between what a person hopes to see and actually sees) appears to remain low, and any discrepancies can be easily overlooked. Indeed, various studies show that some type of personal, written, or verbal focusing must accompany videotape playback if significant behavior changes are to result.

Ultimately, the potential for helping people improve seems to depend partially on the characteristics of the users, the setting, and the type of confrontation. But, at least, in micro-teaching with videotape-feedback, one confronts one's *learned* performance, not one's *personal* traits and attributes — which can be more painful to face.

In its broadest sense, micro-teaching provides an opportunity to present something and then assess the outcome of that presentation — to *see* oneself in action and to *analyze* what happened. Videotape media usually serve as a mirror. The format is variable, ranging from a formal micro-teaching session to a videotape of a segment of real life. Less important than the setting are the situation and the content under examination. The crucial aspect is self-confrontation.

The cases described below all involve micro-teaching and self-confrontation. The variable is the institutional setting, while the common factor is the modification of the micro-teaching concept to fit peculiar needs. Taken together, these uses show that micro-teaching is dynamic rather than static, that it can be adapted to achieve a variety of goals.

Case Study 1: Alvan Ikoku College of Education, Nigeria

Nigeria has recently insituted a universal childhood education program that entails solving a number of problems, chief among them the training of an estimated 40,000 additional teachers. In response to these concerns, the staff of the Alvan Ikoku College of Education in Owerri has been experimenting with ways to turn out more newly qualified teachers and more teacher trainers. With the assistance of UNESCO, the UN Development Program, and UNICEF, AICE joined forces with the East Central State Ministry of Education and the State School Board to conduct a one-week workshop for re-orienting teachers.

After micro-teaching and its place in a teacher-education program were discussed, videotapes of micro-teaching sessions were shown and descriptive written materials distributed. Participants were then divided into groups to develop a five-minute lesson on any subject that they could feature teaching to five primary-school pupils. They were told the lesson would be videotaped. Once the participants had taught and viewed their micro-lessons, they returned to the larger group to discuss the experience and to receive information on interaction analysis, classroom observation, and supervision. The participants also viewed some Nigerian-made model tapes illustrating various classroom-teaching skills.

The participants then spent two days developing, teaching, and analyzing, with the use of videotape, micro-lessons that had been taught to primary-school children. One day was devoted to classroom presentation skills, and the other day to developing questioning skills. The teacher trainers then met collectively to discuss the process and to brainstorm on ways to build this process into the existing teacher-training curriculum. Time was also set aside for learning to use the videotape equipment and to produce model lessons.

At the course's end, each participant anonymously completed an evaluation form. The 120 participants who completed the form generally considered the micro-teaching sessions and experience with videotape media relevant to their professional development. In particular, they valued the opportunity to see, analyze, and criticize their own teaching, as well as to watch others teach.

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Case Study 2: Nurses Improve Communication

A nurse discusses with four colleagues the appropriate range-of-motion exercises used to rehabilitate a patient with limited use of the lower arm and the hand. A routine occurrence in the nursing world? No. The nurse in question was giving a presentation not to share information but to improve her ability to communicate. The nurse, her colleagues, and a supervisor later viewed a videotape of her presentation, identifying its strengths and its weaknesses. They agreed that she was talking too fast and leaving others out of the discussion. Armed with some constructive suggestions, the nurse then repeated the presentation to different nursing colleagues — a videotape of which revealed a decided improvement.

In nine sessions in three days, nurses involved in this training seminar tried out and studied seven communication techniques. The preliminary session was designed to familiarize the nurses with the procedure, help them assuage initial jitters, and help them overcome the "cosmetic effect" of seeing and hearing oneself on television for the first time. The supervisor's role in Session I was merely to point out positive aspects. Session 2 focused on the relatively easy-to-grasp skill of using set-induction to begin a presentation. Like subsequent sessions, part 2 followed the teach-reteach cycle: each nurse tried, evaluated, replanned, and retaught each skill. The third session covered questioning, a first step in reducing the nurses' talk and increasing the recipients' participation. In session 4, the concept of reinforcement was introduced. Since the nurses' audiences had begun to participate more fully, the nurses needed to recognize the positive effects of rewarding such participation. Session 5 focused on probing questions, those that require a more substantial response than "yes" or "no."

In Session 6 the participants examined their gestures and behavior during their short presentations. They learned to vary the stimulus — to use a combination of activities such as moving around the room, altering the pace of the presentation, varying the tone of voice, and so on to help rivet attention and increase interest. Session 7 reinforced this notion by concentrating on the skill of using examples to clarify a concept, illustrate a point, or introduce new knowledge. In Session 8, the participants practiced the skill of "closure," relating the main points to each other and summarizing key concepts in the presentation. Session 9 was devoted to giving each nurse the chance to tie together all of the skills introduced.

Eighty-five percent of the participants, learner evaluations showed, felt anxious or nervous before their first micro-teaching session, and 90 percent were not sure they wanted to take part at all. However, by the end of the three days, all of the nurses saw the value of the experience. All appreciated the focus on specific skills, and half felt that the pace of learning was comfortable (45 percent contending that each skill deserved more time). All of the nurses agreed that watching themselves on videotape was extremely valuable, and most (70 percent) considered student feedback helpful.

Case Study 3: Executives Develop Helping Skills

Researchers once thought that training could not affect interpersonal communication significantly. But research based on modern counselling and education techniques indicates interpersonal communication can be improved if the components of the communication process are defined so that they can be interjected into a learning program. Once the communication process is broken down serially into skills that can be dealt with one at a time and integrated, structured training can be viewed as providing opportunities to practice those skills in a "failsafe" situation with the benefit of immediate feedback.

The skills used as the basis of executive training, which utilizes both micro-teaching and videotape, are not new, but they are not known and used enough. Built into a repertoire, these skills can help people overcome problems that are the subject of such commonly voiced complaints as "He says something and denies it at the next meeting" or "She interrupts me."

Poor communication habits sometimes betray a lack of respect for the co-worker. But sometimes even well-intentioned executives unwittingly commit these small crimes. They need to review certain basic helping skills:

- *Attending Behavior:* Demonstrating interest in the speaker's words by maintaining eye contact and avoiding changes of topic
- *Leading:* Directly or indirectly inviting verbal expression and opening the lines of communication
- *Focusing:* Pinning down a topic or sub-topic to explore when a discussion rambles or otherwise gets out of hand
- *Questioning:* Eliciting, on the one hand, maximum response and exploration and, on the other, "yes-no" answers
- *Clarifying:* Expressing genuine interest in the other person's perceptions of a situation and coming to grips with those perceptions
- *Reflecting feeling:* Expressing, acknowledging, and sharing feelings arising during a conversation
- *Respecting:* Displaying a positive regard for the speaker's feelings, experiences, and capabilities
- *Summarizing:* Reviewing and tying together ideas so that all involved understand what occurred and what to do

Executive training has helped increase participants' confidence in their communication abilities and their awareness of various communication options. Its success shows that interpersonal communication can be consciously improved.

Case Study 4: Rural Health Development

A recent UNICEF-sponsored investigation of the procedures in use in Nigerian regional health-training centers revealed that what was needed was not advice on formal education methods but rather some help in using "nonformal" education techniques. Subsequently, the micro-teaching format, in this case without videotape, was adapted to serve this purpose. Emphasis was placed on the use of existing media and uncomplicated techniques, including silk-screening and demonstrations.

In an experiment aimed at making better use of silk-screening's potential, each of five health agents was asked to prepare and present a 10-minute lesson on how leprosy could be presented visually. Then, all the concepts presented were critiqued and the most promising further developed. As it turned out, the discovery, care, and treatment of leprosy could be portrayed in sequential silk-screen posters that could be printed in volume in both English and Igbo (the local language) for use by the itinerant rural health agents and in village centers.

Another experiment, this one aimed at developing a better means than lecturing for conveying health information to villagers, grew out of discussions with the directors of the rural health centers. The goal was to approach one health topic — basic sanitation — in a novel way, using the micro-teaching concept to stimulate agents to consider demonstration and other instructional modes besides lecturing. To start, ten agents were told the difference between a demonstration lesson and a lecture and asked to develop a 15-minute demonstration lesson on a basic sanitation problem. Each agent presented his demonstration to the other nine agents and a supervisor (the author), who jointly analyzed the forms of the demonstrations and their content. The group then decided that showing villagers how to build a basic sanitation facility might be a better teaching mode than lecturing. This revelation, which was not imposed from outside, prompted the agents to revise their entire curriculum to accommodate the demonstration mode.

These four case studies illustrate that micro-teaching (with or without videotape) can be adapted to meet the needs of radically different audiences. While all the experiments were aimed at improving communication, each approached the task differently. The Nigerian college program took place in a one-week in-service course involving primary students; the nursing program took place in a three-day training seminar for peers; the business executives spent two days in a retreat setting; and the rural health-agents program, highly informal, was wedged between the agent's normal activities. Clearly, the point is that each program used micro-teaching and self-confrontation successfully to meet its own unique needs.

■ *Robert J. Miltz, P.O. Box 301, Maseru, Lesotho*

3/4" video or 16 mm film?

Numerous media combine sound and pictures to communicate with an audience. They range from slide shows to super-8, 16mm, and 35mm film, and from [illegible] to 3/4-inch, 1 and 2-inch videotape. The production costs and quality associated with these media vary, and each medium offers unique advantages. Particularly interesting is a comparison of 16 mm film with 3/4-inch format videocassettes, since these two media are roughly comparable in range of use. Bear in mind, however, the fact that the cost and capability of videotape and film overlap at many points, so the most useful comparisons are those made within the context of a specific project or application.

Costs: In many cases, video offers a significant cost advantage over film. Unlike film, it does not require an elaborate subsystem of machinery and professional capacity for developing and processing. Moreover, the same piece of videotape can be erased and recorded upon numerous times without significant loss of tape quality in most cases; film, in contrast, can only be used once. Then too, animated graphics, special effects, supers, or titles are often less expensive to produce in video than on film.

Still, film may be more appropriate than video in some cases. The best approach [illegible] weighing the economic pros and cons [illegible] to develop a *detailed* description of what you want to see when you watch the finished program. Then, shop for estimates of the costs of reaching that goal from various film and video producers.

Quality: For some applications, image quality may matter more than production costs. At its best, 16mm film equipment can record a given scene in more detail than video equipment. The video image is sliced into hundreds of horizontal stripes or scan-lines, while the film image is made of tiny grains and appears more natural to the eye. Film is also capable of reproducing more subtle colors and more life-like flesh-tones than video, and it can record a greater range of brightnesses. For example, under lighting conditions that would enable a video camera to record a scene with a white sky, a wall, and a black shadow, a film camera might be able to capture the details of clouds in the sky and the silhouette of a person in the shadow on the wall.

Technical differences like these matter only if they contribute to or detract from the esthetic impact or effectiveness of the program. If you or your audience accord [illegible]stic considerations low priority, such [illegible]erences need not enter into your decision.

Ease of Operation: Film equipment still has a slight edge over video in field situations where maneuverability, rapid set-up, or access to tight places is critical. The advantage resides in the self-containment of the single-system film camera, which records sound on the film and need not be connected by a cable to any separate recording device. (The video camera, on the other hand, must always be connected to a videotape recorder, making moving about more difficult.) Film is also superior where lighting conditions are difficult (where, for example, light is dim or where scenes feature bright light sources). But in most field-shooting situations, both film equipment and modern video equipment are fairly simple and easy to operate.

Flexibility: A unique advantage of videotape is the ability to play back immediately what has just been recorded. This second (or third or fourth) chance enables the videographer to spot and correct errors or omissions that might go unnoticed in a film until after processing and development at the lab. When action is staged or recreated, video also makes recording rehearsals, as well as attempted takes, feasible since unuseable footage can be erased and recorded upon again without incurring an additional cost for tape. Consequently, subjects can watch their own mistakes and successes and see what to correct in the next attempt, if necessary, and the videographer can capture the most natural performance (which is sometimes the one that occurs just before the cameraman working with a limited amount of film begins recording).

The playback feature of videotape can also help create better rapport with the people being photographed. By bringing them out of the goldfish-bowl psychologically, playback enables them to see themselves and their friends in a fascinating new way.

Editing: In the editing process, original field footage on videotape is *copied* onto the master tape on which the program is being assembled, and the original tapes are normally unaltered by the copying process. Original field footage on 16mm film, however, is normally *cut* to order for the specific program in the final stages of the editing process, which makes using footage in a later application relatively difficult.

Display & Distribution: Film can be projected on relatively inexpensive, easy-to-obtain equipment, and the image can be magnified for groups to view. In contrast, the number of people who can comfortably watch the same TV screen is limited, and videotape playback equipment may be more difficult or expensive than film equipment to buy or rent, especially away from urban centers. Video's limitations can be skirted in numerous ways, however. Several TV sets or monitors can be hooked up to the same tape player so that several groups can watch at once. And some projectors now available can produce a picture several feet across, although these new projectors are relatively expensive and can be difficult to set up.

Alternatively, a videotape can be transferred to 16mm film at a cost between perhaps 30 and 100 dollars per minute of program, and extra copies can then be made at regular film-duplication rates. The finest transfers completely eliminate the video scan-lines and produce a pleasing, film-like image. But even at its best, the transferred video image will contain less detail than an image of the same scene shot originally on film, and this difference may prove critical in some applications.

■ *Chapman Mott, Videographer, Houston, Texas*

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MASS COMMUNICATION TECHNOLOGY

a case study in training campesinos

Peru's 15 million inhabitants (half of whom are rural) live on 1,250,000 square kilometers divided into a coastal region, mountains, and tropical forest. In 1969 Peru initiated an agrarian reform that turned almost 30 percent of the land formerly worked by peasants for landowners into cooperatives. It immediately became apparent that the *campesinos* who formed these cooperatives stood in need of technical and management training and of help in bettering their living conditions.

Most pressing was the need to train *campesinos* to organize their cooperative undertakings. The National Center for Training and Research for Agricultural Reform (CENCIRA) was consequently established. A decentralized unit of the Ministry of Agriculture, CENCIRA received technical assistance from FAO and funds from UNDP. In 1976, the Audiovisual Production Center for Training (CEPAC) was established as part of CENCIRA's Communications Division. With financial support from FAO's Technical Cooperation Program and UNDP, the project (FAO Project PER 76/003) is to be operated solely by Peruvians (now in training as counterparts) by 1980.

CEPAC's Activities and Tools

Not defined precisely from the outset, CEPAC's activities were worked out jointly in response to circumstances and givens. Gradually, six activities evolved in this order: staff development, production of courses for *campesino* training, field application of courses, creation of regional audiovisual production centers for specific needs, and guidance of counterparts on personnel development and the installation of Audiovisual Educational Centers.

During these first three years, the project bought educational television equipment worth approximately $60,000. This is low-cost "sub-professional" equipment (whose signal is not compatible with open-channel broadcasting) that is easy to maintain and use, sturdy, and appropriate to the technological realities of Peru. Some of the equipment is portable, some is fixed. Both reel-to-reel equipment and cartridge equipment, all of it bought through open bidding by FAO from Sony, are employed.

The equipment falls into four categories. One is the filming unit, which includes a magnetoscope, a TV camera, and a monitor plus a power system and accessories. Another is the playback unit, which includes a magnetoscope, a TV monitor, cables and a portable power system. The recording unit includes a magnetoscope, a video console, an audio console, a lighting system, cameras, and a control unit, while the editing unit consists of a magnetoscope, one editing console, and TV monitors. Broadcast over an educational TV circuit, course material (much of it taped in the field) is edited in the microstudio, where supplementary material is added. Programs taped in the field are carried back to the *campesinos* via the playback unit. In all phases of planning and production, feedback plays an important part.

A small equipment-maintenance team also works with the training and production staff. Gradually, the methods of preventive maintenance and repair the team employs are being transferred to all production personnel.

Training of Educational-Programming Producers

Personnel training takes place in two stages. The first is an internship that varies from 3 to 5 months, depending on the number of participants and instructors. Interning involves accepting a schedule of 12 to 15 hours a day, six days a week, during which trainees learn how to use the equipment and how to produce educational television programming. The next stage, in theory 4 to 8 months long but actually much longer, is out-of-school in-the-field production involving contact with the *campesinos*.

The courses involve both action and training, both practical and theoretical work. The products made during the course are evaluated during training and can be used later on. To date, CEPAC has given four intensive training courses in educational programming production, in which 94 persons took part. Of the 94, over half now work in project-related jobs; others have been lured by better job offers, and a small number have left the field entirely.

Production of Courses

The production of a course, in all its stages, is carried out by a Production Unit made up of two or three persons. The initial phase consists of a general survey in the field conducted to determine subject matter. It is followed by an academic survey executed in Research Centers or by professionals in the field. Next comes applied research to assure that — along with *campesino* feedback — academic proposals can be and are translated into course materials. Budgets and regulations must also be worked out at this stage. The next steps involve developing and revising first the booklet, then the script. At this point, a production plan is outlined. The later stages are taping in the field, making sound tapes in the production center, producing written materials, editing the course, and printing the booklets for the participants and instructors. The final stage is course evaluation.

CEPAC has so far produced courses on three principal subjects: production technologies, business management, and living conditions. A total of 25 courses made up of more than 300 programs averaging 20 minutes in length have been produced. Three of the courses have been produced in languages other than Spanish, the Indian languages Aguaruna and Quechua, five courses have been translated into Quechua, and nine more are being translated into Aymara and Quechua.

Program Expansion

Approximately 20,000 *campesinos* have taken CEPAC courses to date. In groups of 15 to 40, they sign up, fill out a form determine previous knowledge, view the class program, participate in an analytical discussion of the program, and watch practical demonstrations.

Beginning in January of 1979, CEPAC will be in a position to train (in modular courses of 20 classes) some 40,000 *campesinos* a year. Training will take place in the *campesinos'* work places, will not need electricity, and will probably cost between $2 and $5 per *campesino*/course.

To fulfill the various needs of a country as large as Peru, regional production centers have been established in Lampa in the province of Puno (to meet the needs of the Altiplano) and in Lambayeque on the coast (to meet those of the north-central zone). Next year, a center will open in Huancavelica to serve *campesinos* in the central mountains and another will begin operations in Iquitos to serve the tropical forest region.

■ *Manuel Calvelo, FAO/CENCIRA Peru (translated by Judy Brace, CDC)*

This article is available from CDC in its original Spanish version upon request.

video from another angle

For two variations of the skeptic's view of video's place in development and effectiveness as a mirror of culture, see Caroline Heller's "The Resistible Rise of Video: Some Thoughts on a Technology and Social Change" and Ross Kidd's "The Technology Trap: A Case Study of Video Use in Non-Formal Education in Botswana." Both articles appear in the September issue of Educational Broadcasting International.

An Interview with Kenneth Noyau

DCR's editor conducted this interview in Dijon, France, on June 23, 1978, between sessions of the International Conference on "Economic Analysis for Educational Technology Decisions." In it, the director of the Mauritius College of the Air, Kenneth Noyau, tells how MCA got its start and where it is going.

Kathleen Courrier: Who Founded MCA?

Kenneth Noyau: MCA was created in 1972 by Michael Young (now Lord Young), chairman of the International Extension College. On behalf of the IEC, Dr. Young made an offer to the Mauritian Government: IEC would fund and set up a multimedia center, which it would support for five years, by which time the Government was supposed to be prepared to take it over.

KC: Did all go according to plan?

KN: Not exactly. Before the five-year period was up, the Government had to subsidize the operation. The MCA had been asked to help private secondary schools by providing courses supported by radio and televsion. The demand for the courses was much higher than expected and inflation had set in. After June 1977, the total MCA budget was met by the Ministry of Education.

KC: Were there any strings attached to these government funds?

KN: No. MCA was created by legislative act as a para-statal body, which means it is under the authority of a Board of Trustees and that, to settle matters of policy, we need go no farther than the Ministry of Education. The Ministry officially controlled MCA from the beginning; that control had little to do with funding.

KC: By a "matters of policy," precisely what do you mean?

KN: I *don't* mean minor operating procedures. The Ministry's authority extends primarily to general policy matters, such as the re-orientation of the MCA. Other policy matters, such as questions of recruitment or decisions about program policy, are settled in-house.

KC: What organizational changes accompanied the change of sponsors?

KN: The first major change occured when the expatriate director left in 1974 and I took over. Another was a result of the creation of the Institute of Education, which assumed some of the main functions of the MCA. We had to reconsider MCA's structure and make proposals to the Ministry of Education for a reorientation toward nonformal education, which had always been our main interest.

KC: What have been the main focal points of the reorientation?

KN: First and most important, we decided to become a service organization working in conjunction with all the ministries and organizations interested in adult education in Mauritius. What we wanted, and now have, is an inter-ministerial effort to help Mauritians understand the problems of development, the efforts of various ministries to solve them, and the ways in which average people can do their part to help.

KC: Can you give some examples?

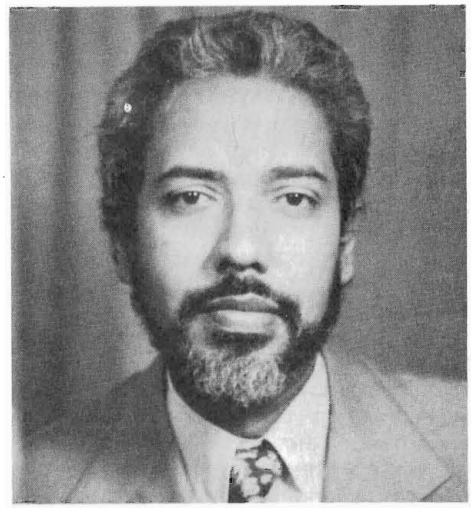
KN: Of course. Every week on TV there's a health program containing motivational information. The Ministry of Health has field officers who go out to the villages and make use of posters and other visual aids for their work, so these officers suggested that we help them develop these materials. At a later stage, we hope to extend our service to the production of a multi-media package.

The content varies, but the same type of proposal has been made to all organizations working on a national scale . . . the National Consumer Council, for instance. With the NCC, MCA has already produced a series of radio programs as a pilot project and has evaluated their impact by setting up listening groups and monitoring the programs. The NCC has now come back to us requesting a second series, this time to be televised.

The important thing to note here is that these programs remain the responsibility of these bodies — they are not MCA programs. We offer to provide the technical know-how in the production of the programs and the support materials, as well as help in utilizing and evaluating them. We hope to set up a whole infrastructure of group leaders and *animateurs*, a model we first experimented with in this NCC program. But the first move is made by the cooperating ministry or agency, not by MCA.

KC: In what sort of production facilities do you manage all this?

KN: Very limited ones. The general aim has been to keep expenses as low as possible and properly assess all the resources at hand. Taking this approach has enabled us to develop slowly without foreclosing the possibility of wide-scale expansion. For example, we now use the services of the local broadcasting station. Although I would like to see MCA in possession of its own studios eventually, it seems more important at the moment to define our activities and create our audience before spending large sums.



KC: Who makes up this audience you are trying to define?

KN: Most of the work done so far has been with the schools. The target audience averaged around 10,000 in the first years. As the Institute of Education has taken over some of our work and adopted some of our methods in the lower forms of the secondary schools, we have been trying to aim our courses at a different audience — mostly out-of-school.

KC: So, you've recently gone through a transition?

KN: We are still going through a transition and had we invested earlier on in expensive equipment and production facilities, we would have been hard-pressed to make full use of it during the transition.

Our school audience is composed of whoever wants the courses, the idea being that forcefeeding is illicit pedagogy. What we have done, therefore, is secure relatively low-cost equipment for radio, tape-recording, and video recording for which we use ¾" cassettes and film-making equipment. Use of this equipment enables us to get pictures from the student's environment instead of relying exclusively on imported materials. Some of this machinery, incidentally, was given to the MCA by various foreign countries and organizations.

KC: I presume that MCA is still evolving and that new programs and emphases will emerge.

KN: Correct. We have just developed a graphics section and are now recruiting our own producers, cameramen, and maintenance technicians. In terms of the clientele, we are catering more and more to out-of-school audiences — ranging from primary-school leavers to adults.

KC: If it is not in bad form to ask, where do you expect to find yourself and MCA in ten years?

KN: I am not sure about myself. I would be interested in helping to launch a new project. I would hope by then to see the MCA fairly well settled in its own production facilities, providing second-chance education and an increased range of programs for adults in a continuing-education system. ■

APPROPRIATE RESEARCH FOR EDUCATIONAL TECHNOLOGY: A DEFENSE AND TWO EXAMPLES

The energy crisis, ecological imbalance, and worldwide inflation have caused many to question unbridled "progress" in the development of consumer luxuries. With technology in general under fire, the concept of "appropriate technology" now needs to be extended to the field of educational technology.

Embracing the concept of "appropriate technology" — which normally refers to economic and production processes that make efficient use of capital, materials, labor, energy, etc. — can help educational technology designers outgrow an excessive fascination with expensive hardware. By the same token, it can help researchers in the field of educational technology abandon unnecessarily sophisticated research methodology.

The field of educational technology needs research to help practitioners fulfill its promise of greater efficacy in teaching and learning. This need is greatest in developing countries because much research already completed in developed countries has to be replicated and validated in the context of different social and cultural realities. In particular, the relative value of equipment produced by various countries and according to various standards has to be assessed, and cost-benefit analyses have to be performed. And basic research on tolerable signal/noise ratios for different ethnic groups cannot be considered complete if based solely on Western data. Similarly, visual and auditory perception and literacy have to be studied anew for emerging cultural and social clienteles. Perhaps most important for developing countries is research on administrative, organizational, policy, and strategic matters.

Whatever the obstacles and fears surrounding research, it remains necessary. Quite simply, disciplined inquiry that adheres to the scientific method affords more confidence in the inferences made from data to reality. Thus, when circumstance makes rigorous sampling or measurement or analysis impossible, it is still wise to gather as much data as possible. After all, a farmer in Bolivia or Iran makes decisions on the basis of his observations; so why can't educators in Bolivia and Iran attempt to understand the social and educational phenomena that interest them, even when the controls and guarantees are missing? Can't they lessen the confusion of unordered data in the name of better decision-making even if their findings don't advance the discipline?

The practical and realistic approach to research in difficult conditions is summed up ably by Wilbur Schramm in "Notes on Instructional Cross-Media Comparison" (1971). Says Schramm,

> "a researcher in a developing country, facing restrictions on random selection and control of treatments, should . . . use less than ultimate designs as long as he is aware of what he is doing, is willing to patch them up by supplementary work and additional analysis, and is scrupulous in not claiming more than he has found."

Reflecting Schramm's dictum, the following two examples show how useful data can be collected and analyzed without recourse to computers or to highly trained research personnel.

THE DATA TREE

Problem one: A manageable research technique for assessing the potential audience of a government educational radio program in Bolivia was needed. The program's producers wanted to know which of several formats (interviews, lectures by a teacher, and dramatized sketches) being considered was the best received by the Quechua-speaking listener, the difference in achievement of the instructional objectives of the lessons as presented in the different formats, and the effect of using Spanish versus Quechua as the broadcast language.

The simple research objectives were complicated by such factors as the distances to the listening communities, the difficulty of gathering together a group of respondents, the lack of Quechua-speaking research help, and a high rate of illiteracy among the respondents. Also, the respondents had little time to devote to this exercise.

The research procedure was built around the use of cassette recordings containing the different "treatments." These recordings were played for the listener as a surrogate for off-the-air broadcasts, and individual interviews were held immediately after the listening session. All responses to such questions as "Did the respondent prefer the format?" or "Did the respondent give evidence of achieving the instructional objective?" were coded in a yes-no fashion. Each respondent's data was entered manually on a separate sheet with basic demographic information about the respondent. The data was then all entered on large sheets of paper marked off in columns and rows (the rows representing the questions asked; the columns the demographic data). More specifically, the columns were arranged in a "tree" fashion. For example, the first horizontal division of the data sheet had 3 sub-divisions, with each of the three columns representing the three communities visited for the evaluation, and each of these three columns was divided into two sub-columns representing male and female. Finally, each "male" and "female" column was divided into two columns (one for those with less than three years schooling and one for those with more). The finished data sheet layout had 12 columns, and one sheet was filled out for each of the treatments.

This "tree" arrangement made visual examination of the results of both total and partial sums immediately accessible. Leaps from scores to crossbreak tables were unnecessary since the crossbreaks could be visually appreciated in terms of the number of check marks in the column representing each demographic category across the rows representing each evaluation question. For example, it was seen that achievement of the instructional objectives was always associated with the amount of schooling for all formats but in differing degrees for different formats.

RESPONSE INSTRUMENT FOR ILLITERATES

Problem two: A literacy-free response instrument for use with adult learners was required by the producers of the same educational radio project in Bolivia. The producers suspected that certain electrophysical characteristics of the signal could have educational consequences, especially in the project's bilingual setting, and they wanted to know the effect of different frequencies and of different signal/noise ratios on learning.

In the absence of previous research on the parameters of intelligibility for the Quechua-speaking listener, the radio educators decided to evaluate for themselves the effects of high-frequency clipping and low signal/noise ratio.

The presentation of the treatments themselves did not pose a problem since recordings could be presented to the subjects, but finding a means for listeners to indicate their choices in a way that would not be influenced by intelligence, schooling, etc., did present difficulties. (Even underlining or circling responses requires knowledge of how to hold and use a pencil.) At the same time, a shortage of researchers to interview the subjects meant that developing some type of individual response that could be gotten rapidly in the field and saved for later analysis was necessary.

The solution to this research problem? Providing the subjects with simple drawings, each of which represented aspects of the themes in the tapes used as stimuli. To respond, the subjects ripped the paper in a prearranged way to indicate a given answer. A pretest of this literacy-free response mode proved it satisfactory, and the production staff believes it can isolate the effects of the variables in question on the intelligibility of the message as presented in the various treatments by computing the "correct" answers as recorded on the "torn" answer sheets.

These two examples of the adaptation of research to local conditions should inspire practitioners of educational technology in developing countries to find ways to design and carry out the research needed to answer their questions. Research must be carried out. it is not a luxury. But it must be appropriate to c needs and resources if it is to be self-sus taining and creative.

■ *Frank Gerace, Cochabamba, Bolivia. This article is adapted from a longer one published in the December 1978 issue of* Educational Technology *(Englewood Cliffs, New Jersey).*

research on broadcasting for rural community development — hypotheses and suggestions

How can radio and television broadcasts promote the goals of community-development efforts in rural areas? What do we know about the importance of institutional support for these broadcasts?

The initiation of *Acción Cultural Popular (ACPO)* in 1947 marked the beginnings of radio broadcasts that have since been used in Latin America, Africa, and Asia as tools of rural community-development programs — of efforts, that is, to increase self-reliance at the grassroots levels and the participation of people in the improvement of their community and in their nation's social and economic advancement.

Typically, broadcasts in community-development programs have had several objectives: basic-skills training (e.g., literacy programs), consciousness-raising, and facilitating dialogues between rural adults and the national government. In Latin America, radio schools have been used to meet each of these objectives, with certain programs focusing more on one and less on others. The *Acción Cultural Popular* model has been used in about 20 radio-based programs to provide skills training, particularly that related to literacy, as well as cultural and religious education, and consciousness raising. *Radio Santa Maria* in the Dominican Republic has put more stress on literacy and other primary-school subjects. The *Movimento de Educação de Base* in Brazil had a relatively stronger emphasis on motivation for local mobilization. In Africa in the 1960's the governments of Senegal and Niger introduced rural radio programs intended to stimulate a dialogue with the *paysans* through information broadcast from the capital and feedback in the form of written letters and tape recordings. Messages have been sent over radio in the six media campaigns in Tanzania, and over television in the *Télé-pour-tous* program in the Ivory Coast. To small receiving groups in rural areas has been sent information about agriculture, health, nutrition and government policies and practices; this knowledge was expected to lead to improved rural living conditions and hence to increases in human resources.

Thus, we have the beginnings of accumulated experience and, it is hoped, of wisdom. What we need now to support wisdom and experience is research that better establishes the links between the information-delivery role of radio and television and the process of local community development.

Some hypotheses about this relationship that merit further testing are those related to the importance of *institutional support for* culturally-rooted processes such as schooling, religion, and traditional political and economic structures, rather than organizations per se (which may be value-free, short-lived and rationally designed to meet specific goals). In particular, three hypotheses can be gleaned from what has been learned about using media for community development.

I. *Information and education broadcasts to rural areas must have a basis of institutional support.* Studies of the diffusion of innovations show that the adoption of an innovation that is inconsistent with one's values generally requires a concomitant value change. Since institutions have the power to support value changes, isn't their support of messages advocating behavioral changes essential? The institution used most often to support educational broadcasts has been the school, and the relative lack of success of out-of-school educational broadcasts leads us to ask whether that sort of institutional buttress must not exist as a pre-condition. The church, and especially the support of local priests, has also been shown to influence the success of radio schools in Latin America. Similarly, strong political parties in certain socialist countries (like TANU in Tanzania) and traditional community councils in some Asian countries have demonstrably affected the success of educational broadcasts. In general, radio or television-mediated adult-education programs have not succeeded outside the context of institutions, though it has not yet been proven that they couldn't.

II. *A favorable political climate and local mobilization structure must precede the delivery of information and education broadcasts.* In a study of *Acción Cultural Popular Hondureña (ACPH),* Robert White concludes that increased skills in literacy, health, agriculture, and other such areas appear to be *effects* rather than causes of socioeconomic structural changes. The relative success of the education campaigns in Tanzania seems to be directly associated with the political reforms instituted along with adult-education programs. And unlike schools, churches, and other institutions that serve to preserve traditional wisdom, political mobilization structures can promote radical change.

III. *Intermediate incentives must be offered to individuals to insure that they learn the skills and knowledge taught over radio or television.* Whereas schools and like institutions control the incentives and rewards for students' learning, out-of-school educational courses often lack such incentives altogether. Learners do not come into daily contact with teachers and peers, nor do they typically receive grades and promotions. Nonetheless, some non-institutional incentives do appear to have increased learning, which suggests that schools and other institutions might be bypassed if effective incentives are offered. Where prestige is attached to literacy (as it is in China), where students must pay a fee for a radio course (as they must in the Dominican Republic), where certificates or diplomas are awarded, or where public recognition is given for adopting new practices, active participation in media-based courses is high. Some relatively simple experiments in the use of various intermediate incentives would help us better understand their value in these programs.

These three hypotheses are all variations on the theme of institutional support. Other research areas tangentially related to this theme are the use (and development of alternative models) of feedback loops between broadcast originators and their audiences, and the optimal complementary relationship between formal schooling and out-of-school educational broadcasting.

The present shortage of sure statements about the effective use of radio and television in meeting the goals of community-development programs reflects in part the difficulty of *measuring* the effects of one on the other. However, recent advances in the techniques of community level research (intermediate research) and research that community members themselves help design and implement (participatory research), as well as our increased understanding of the components of development-oriented broadcasting and of local participation in development activities, make productive work in this area easier and more fruitful.

■ *Jeanne Moulton, Institute for Communication Research, Stanford University*

VIDEO BASICS

On contract to UNESCO's Division of Structures, Content, Methods, and Techniques, John Hopkins and Sue Hall of Fantasy Factory Video in London have developed a foundation course in portapak-based video production. Geared to meet the needs of extension workers who use video primarily for documentation and educators who are not directly involved in program production, the course consists of 14 modules designed for use in groups of a dozen or fewer people.

The modules, eight to ten of which will probably be presented to any given group, each last approximately 2.5 hours. Collectively, they cover basic handling skills, electronic and live editing, in-camera production, theory, and maintenance. Accompanied by students' and trainers' manuals, the modules can be presented two-a-day during an intensive course or one-a-day if a more leisurely instructional pace is preferred.

Field-testing of this video course is still in progress, and registration will not open until the release date for the revised version has been fixed. But inquiries may be sent to the course developers at Fantasy Factory Video Ltd., 42 Theobalds Road, London WC1X 8NW, England.

A Communicator's Checklist

1 *Communications for Tomorrow: Policy Perspectives for the 1980's* contains essays by 13 prominent Americans detailing economic, legal, technological, and social perspectives on information and communication. Only one essay deals directly with social service applications of media, but the entire volume may interest some *DCR* readers since American domestic deliberations will influence the development of information infrastructures the world over.

William Lucas's essay "Telecommunications Technologies and Services" discusses how American agencies have used (and failed to use) satellites, cable, and broadcast technologies for social services. To those *DCR* readers discouraged by bureaucratic obstacles to effective media use, Lucas offers no consolation — only a reference to the 1,200 pages of regulations and 12,000 pages of guidelines imposed upon would-be U.S. users of communications for social service.

Excessive U.S. federal paperwork is related to one of the major themes of *Communication for Tomorrow:* the difficulty of orchestrating action (and developing consistent government policies) in a pluralistic, democratic, and capitalistic society. The other major theme is the potential of emerging information technologies — awesome, whether or not effective information policies are developed. While these dilemmas of affluence and democracy may seem less than pressing to some, the convergence of telecommunications, broadcasting, and computing in America is bound to affect, if not shape, world politics, economics, and society.

In the opening chapter, Marc Porat recounts his pioneering, if controversial, classification of the United States as the first "information society" (wherein the production of information absorbs more labor and accounts for more of the GNP than does agriculture, industry, or non-information services). In an information society, information policies become crucially important. Contributing to the need for new policies, technological advance is considered the "big wheel" of social change, and ideology the "little wheel."

Walter Baer of the Rand Corporation also engenders excitement and optimism. Exploring the emerging technological tools of mobile radio-telephones, satellites, micro-processors, and fiber optics, Baer argues that costs are continuing to fall as options proliferate.

Subsequent chapters discuss, in a detailed and analytical way, a complicated tangle of regulatory structures, monopolistic and oligopolistic industries, and government inability or unwillingness to develop comprehensive policies. The authors reflect a thorough knowledge of the pitfalls of American policy-making, providing help in imagining the deliberations about rates and rights that many countries conduct behind the closed doors of their Post, Telephone and Telegraph administrations.

Although the dose of cold and complex reality contained in these chapters seems at first a proper antidote to the uncomplicated optimism of the early chapters, editor Glen Robinson fails to reconcile uplifting economic and technology-related prognoses with mixed prospects for policy-making. Surprisingly, a book sponsored and published by the Aspen Institute for Humanistic Studies provides no overarching framework of human values or social objectives. Indeed, the editor declined even to summarize, saying: "To those who are used to the clean crispness of the executive summary, it may strain credibility to claim that the foregoing discussion is itself only a summary of the many issues that are emerging in this field; nonetheless, that is the case."

It is tempting to compare this volume with similar reports (admittedly Government-commissioned and probably more lavishly funded) that have emerged recently from other western countries. In 1971, Canada's "Telecommission" produced *Instant World*, an excellent treatment in layman's language of 40 expert studies probing the particular communication needs of Canada's diverse and widely scattered population. Since then, Australia has produced a similar report, *Telecom 2000*, whose component studies entailed projections of societal needs. West Germany has published *Telecommunications Report,* which also encompassed a large number of detailed studies. Most recently, France produced *The Computerization of Society,* a study stressing attention to social needs over accommodation to industry pressures or technological change. The French report specifically warned of American dominance as a direct threat to French national sovereignty.

Perhaps the world's major technological and economic power is destined to produce reports stressing "power" perspectives, just as smaller western nations are concerned with the societal impact of technologies often pioneered beyond their borders. Third World nations, in the name of national sovereignty, might place even more emphasis on ideology — Porat's "little wheel" of change — as a lever upon the "big wheel" of foreign-directed technological change.

An increasing interdependence demands that nations understand each other's diverging perspectives on information. However, *Communications for Tomorrow* devotes less than 20 pages (of 500) to foreign perspectives. Therefore, readers seeking a representative picture of western approaches should read this volume along with the other western statements. It should also be remembered that such comprehensive studies from "Second" and Third World perspectives are yet to be undertaken.

Communications for Tomorrow: Policy Perspectives for the 1980's can be obtained for U.S. $10.95 from the Aspen Institute, Publishing Program Office, P.O. Box 1652, 360 Bryant Street, Palo Alto, CA 94302, U.S.A.

■ *Jonathan F. Gunter, Academy for Educational Development*

2 Like trickle-down development, "top-down" communication strikes development professionals as a rather ugly thing of the past. In its place, "bottom up" message-sending has been bought and tried with some success. So too, the "lateral transfer of information" ... plain old talk among equals. *Message from the Village* is the transcript of just this sort of talk, the record of casual conversation (albeit through interpreters) between women on subjects uppermost in women's minds.

At the suggestion of Tarzie Vittachi of the United Nations Fund for Population Activities and with UNFPA funds, Perdita Huston roamed the outlands of six developing countries in 1976 and 1977. She was at leave to gather impressions, to discover firsthand how village women perceived their lot, their roles, and their prospects and she wanted to hear what they thought about the men in their lives.

Huston's aim, though not quite secret, was more specific than she could let on. Her particular interest was in assessing impressions that bear on women's attitudes toward family planning, a subject women in some of the countries visited are not apt to broach with their own daughters, much less with a stranger. To further her purpose, she latched on to the only interviewing technique that stands a chance where social scientists fear to tread. Parlor talk, free association ... call it what you will, roundabout discussion was the answer. Huston backed off when the interviewees lapsed into silence or tears and gently returned to related but less painful subjects. In the same spirit, she offered stories and facts (though few of these are included in the edited transcripts) about her own life to housewives whose curiosity, if not mobility, match her own.

What did Huston find? The facts are not especially surprising, but they are *moving,* and this record of suffering endured with survival its only reward may move those among the powerful who are left cold by slogans. After all, the "by and for women" motif notwithstanding, the inside line on village life in Kenya, Egypt, Sudan, Sri Lanka, Mexico, and Tunisia is not that women the world over find in childbearing and social deprivation a common ground. This was known. The "message from the village" is rather that women have done all they possibly can with the slight material and social resources at their disposal. As for the message *to* the village — and a response is in order — the women interviewed seem to know what they want:

education, the understanding and cooperation of menfolk, and more education.

The preoccupation with education, however wild or benighted the expectations that attend it, should be construed by communicators as a two-sided opportunity. Over and over again, Huston heard complaints that broadcast programming was irrelevant and scheduled to interfere with fieldwork and marketing. Too few programs, the women declared, touched on family life, health, women's problems, and local news. Too few were practical. At the same time, the villages in which family planning and female education had a start (those in Sri Lanka the shining examples, of course) owed something to the infiltration of educational media. If the medium and the message are right, the Moslem woman in North Africa or *la catolica mexicana* appears willing at least to brook ideas that are forbidden or uncomfortable to raise with her husband — whose *re*-education is the second, if not the first, most pressing challenge.

Message from the Village (the sequel of *Third World Women Speak Out: Interviews in Six Developing Countries,* which The Overseas Development Council published in 1978) can be obtained for U.S.$3.95 from The Epoch B. Foundation, P.O. Box 1972, Grand Central Station, New York, New York, 10017, U.S.A. ■ *K.C.*

3 Those engaged in technology transfer and those who wonder and worry about their service and possible transgressions will find in Denis Goulet's latest book a powerful vision and some enlightening insights into the controversy surrounding the use of technology to serve human beings. His previous book, *The Cruel Choice,* a masterful analysis of the "ethics of development," was a philosophical journey into the ultimate goals, purposes, and ethics of development. Goulet has the unusual ability to question almost all tenable conclusions and conventional wisdom concerning development. Possibly, one's conclusions will differ from his, but the agony and effort spent understanding his analysis are rewarded.

In *The Uncertain Promise,* Goulet again asks some difficult questions: Will technology deliver on its promise to bring development to the Third World? Is modern technology the key to successul development? Can technology be transferred from one cultural setting to another in ways that are more beneficial than destructive? The answer to these questions, as the book's title suggests, is that technology offers an uncertain promise. Goulet concludes, paradoxically, that technology is needed to alleviate both the miseries of underdevelopment and the ills of overdevelopment. Yet, technology must be used cautiously and wisely to serve these noble purposes, as it is a two-edged sword, simultaneously a bearer and destroyer of values. While rejecting technology as a panacea for the ills of underdevelopment, Goulet concludes that societies shouldn't make romantic flights from technology. It is imperative to remember, he urges, that the central focus of development is people, and that people can manage technology so it is "beneficial." According to Goulet, the issue is to obtain and use technology to serve genuine human needs by creating a "vital nexus" that links societies' value options with its development strategies.

The Uncertain Promise draws on various recent field surveys made in Latin America, as well as on some scholarly research. Equally important, Goulet reviews historical and philosophical works and reassesses them in light of the important questions he addresses. And he weaves them together in a colorful well-thought out tapestry.

The Uncertain Promise: Value Conflicts in Technology Transfer can be obtained for U.S $5.95 from the Overseas Development Council, 1717 Massachusetts Avenue, N.W., Washington, D.C. 20037

■ *Donald A. Swanson, A.E.D.*

4 "Seeking the Barefoot Technologist" is misnamed in honor of a fine idea (Michael Young's) that is only touched upon in IEC's 13th broadsheet on distance learning. And the wisdom of leaving decidedly personal commentary unsigned is questionable.

In the name of balance, remember these percussive remarks, for fault-finding is finished. Indeed, evidence and insight combine so intelligently in this essay that it can scarcely be introduced without being recommended.

What Ms. or Mr. X has given us is, pardon the apparent contradiction, a forward-looking retrospective on distance-learning techniques applied in rural development projects — the subject of the Dartington conference of which Broadsheet No. 13 is the living record. In fifty pages a case is made for distance teaching's growing importance, the issues (chief among them, the trade-off between quantity and quality and the irrelevance of evaluation-cum-autopsy) are enunciated with understanding and some grace, and five case studies (Dominica, Jamaica, Lesotho, Mozambique, Tanzania) are summarized. These studies, tackling which provided the inspiration for deeming the conference a "workshop," stand out among their kind in that the "case students" neither hold forth on the wider implications of the projects until the local implications become reasonably clear nor, at the other extreme, get weak-kneed when the time for generalization is ripe.

"Seeking the Barefoot Technologist" could be called a primer, for reading it profitably requires no prior knowledge. But that term might put off (as the title may well put off) the more footsore in the profession, for whom a blend of common sense, reflection, and practical suggestions may come as a second wind.

"Seeking the Barefoot Technologist" can be obtained from Int. Extension College, 131 Hills Road, Cambridge CB2 1PD, England for U.S. $5 or £ 2. ■ *K.C.*

5 Feeling a need for a comprehensive review of the work being done in adult and nonformal education in Latin America, the International Council for Adult Education in Ottawa, Canada, began in 1975 to collect the necessary data on professionals and institutions dealing with this educational focus. Aimed at providing a base on which to build professional associations, the product of their review is *Educación de Adultos en America Latina.*

The publication treats in computer print-out format the institutions and programs for training in adult and nonformal education in 20 American countries, includes the professional profiles of approximately 415 people in the field, and lists related publications produced in 16 of the countries. To enable others to help it improve and expand its effort, the Council included in its publication a questionnaire and forms that readers omitted from the roster can complete and return to assure their inclusion (and their institution's) in the Council's network file.

Educators throughout the world are sorely in need of channels to use to keep abreast of experimentation and innovation — that which succeeds and that which fails — by their peers. Unfortunately, nothing is as satisfactory and informative as person-to-person contact. The next best thing, however, is to know where to turn to initiate at least a correspondence that might provide some needed answers. This book should help readers find out where to turn.

Copies of this directory, *Educación de Adultos en America Latina* can be obtained in Spanish from the Consejo Internacional para la Educación de Adultos, Oficina Regional, Apdo. 682, San José, Costa Rica for U.S. $6.00. ■ *J.B.*

6 *The Video Distribution Handbook* by Sue Hall and John Hopkins provides some interesting information to practitioners of the video art, particularly to those who wish to put on video shows. It does *not* contain much production information. Definitely for people who already have a video product and are trying to learn how to show it to large groups of people at one time, the handbook treats the video vocabulary thoroughly and with a slight English accent.

Clear diagrams help the reader understand playback systems for video shows. Several methods of video presentation are covered, including combinations of multiple recorders, single recorders, multiple monitors, and video images to be magnified onto large screens.

The last 30 pages of the book are devoted to listing distributors of videotape equipment. Since all are located in England and Wales, we outside of Great Britain may find the list of little use.

The Video Distribution Handbook is available from the Fantasy Factory Video Ltd., 42 Theobalds Road, London, WC1X8NW, England, for £ 2 (checks on British banks the only acceptable currency besides U.N. coupons). ■ *W. S.*

A Training Strategy for Women-to-Women Development and Communication Networks

In the modern industrial world urban transportation and telecommunications have virtually ended women's social and political isolation. But the problem persists in most agrarian societies, where the only information and communication *network* to which most Third World women have direct access is face-to-face communication with other women.

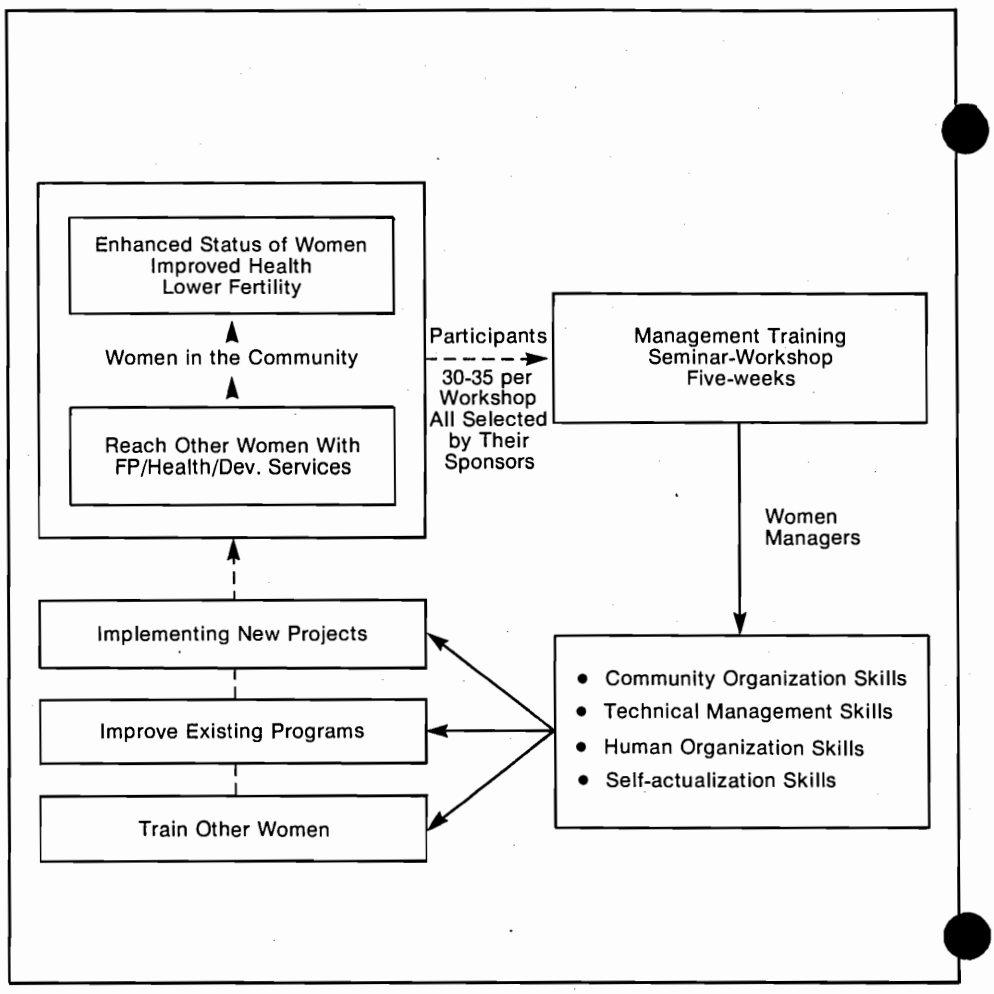
A serious consequence of home-bound isolation for Third World women is the benign neglect of their needs by policy-makers and development planners. While development programs aim to provide health, welfare, and other services to women, socioeconomic and cultural constraints within the delivery system and society militate against the success of such services. This failure is not necessarily a matter of poor resources. It reflects instead the view of policy-makers that women are not partners in development, but merely passive recipients or targets of socioeconomic policies. Indeed, if women are to benefit and participate more fully in the development process, they need training to initiate and implement community-based programs, and they require access to more innovative delivery and communication systems.

In most traditional societies women mingle with other women quite freely, sharing common problems and articulating similar needs. This communication network may be rudimentary and ill-formed, but it can be tapped and merged into a more effective women-to-women delivery system. Examples of such innovative delivery systems are few in number, but important. The most recent, in Bangladesh, has demonstrated the potential of a "women to women" approach. The Concerned Women for Family Planning Project (CWFP) has enrolled increasing numbers of women as participants in a program that reaches into urban slum dwellings through a cadre of trained women field-workers, supervisors, and managers.

One key to the success of CWFP is local women's involvement in program development so that programs meet local priority needs. Another is the provision of on-the-job training for field staff and of management training for the project director and the clinic director, both of whom participated in management training seminar-workshops conducted in Washington by the Centre for Population Activities, a non-profit training institute.

The first seminar-workshop for women on "Planning and Management of Service Delivery Programs in Family Planning, Health, and Development" was organized by CEFPA and funded by A.I.D., UNFDA, the Pathfinder Fund, and other agencies specifically to train women in management skills that few Third World women have had the opportunity to acquire.

The objective of the strategy shown here in a diagram is to improve the participants' own technical and interpersonal skills and to encourage participants to train other women in their communities to plan and implement action programs (for instance, a Women's Resource Center as in Pakistan or community-based health and family-planning services). At seminars, the technical and community-organization skills needed to determine the priority needs of local women are stressed. Participants are also involved in community action programs, trained to deliver social services, given technical knowledge and an understanding of family planning, health, and development commodities, and shown how to use feedback to improve the quality and acceptability of services.



The media techniques used in the seminars vary from the presentation of simple case studies and role-play exercises to the use of special training films, slides, and video cassettes. The participants are encouraged to use newsprint and given practice in making more professional presentations. New insights into communications are introduced through verbal and non-verbal structured experiences and through communication games involving the use of tinker toys, wall charts, and other simple tools.

Thirty-six women from 23 countries attended the first seminar-workshop. The backgrounds of the participants were diverse, but every woman was actively involved in programs benefitting women. One-third represented government agencies, and two-thirds were affiliated with women's organizations. About 50 percent of the women came from the health and family-planning field, and the rest worked in integrated women's development programs.

Two Thai participants interviewed by the Voice of America said that experience gained during the seminar-workshop was sufficient to enable them to go back and work as managers "to start a program which might be about anything — family planning, community development, social or economic development, anything that would improve women's lives in rural areas." Indeed, CEFPA expects that in the near future the participants will form the core of an expanding support and communications network both in their communities and internationally through Technical Cooperation among Women's Programs (TCWP), although further development of the communication network will require systematic post-training follow-up and follow-through.

For more details about CEFPA's women's training programs, write Kaval Gulhati or Peggy Curlin, The Center for Population Activities, Suite 202, 1717 Massachusetts Avenue Northwest, Washington, D.C. 20036, U.S.A.

■ *Kaval Gulhati*

"Different but Equal"

"Different but Equal" (*Diferentes pero Iguales*) began in June of 1977 under the auspices of the Division of Social Communication of Women in Development, Inc., in the Dominican Republic. The half-hour program is aired weekly and nationally through the official government station, Radio Television Dominicana, and forms part of a proposed low-cost training program for talented Dominican women of limited opportunities. The long-range objective is to organize a team of technically proficient women capable of producing educational programming in TV and radio, with an emphasis on development topics.

One of the conclusions of a survey of opinions on women and the media conducted during a conference sponsored by the Interamerican Women's Commission in 1977 and attended by Dominican experts in communications was that "woman's distorted image as projected through the Dominican media tends to isolate and restrict her from tasks that in cooperation with men, could contribute to a more balanced society." In part, this distortion reflects the lack of well-trained female technicians in the Dominican Republic. No female holds a significant directorial or technical position in the 115 active radio-TV stations in the country. What's more, the few women involved in communications depend exclusively on male technicians to record, edit, and produce programs. Under such circumstances, women's creativity and expression are severely restricted.

The survey verified that most radio-TV programming does not help women reorient and improve their lives. On the contrary, it cultivates questionable values and offers simplistic answers to real-life problems. Naturally, this type of programming helps perpetuate female stereotypes, projecting women as sexual objects and as passive and emotionally unstable beings. What a far cry this sort of programming is from what Dominican women need: information on educational opportunities, on malnutrition, on breastfeeding, on gastrointestinal diseases due to polluted water, etcetera.

As the participants in the Seminar on Women and the Media concluded, inappropriate and banal programming reflects the fact that the media are controlled by economically stable men, many of whom are indifferent to women's needs and paternalistic and mocking in their attitudes toward women's social, professional, and family roles. In short, a change in programming and management was long overdue.

"Different but Equal," a channel through which women are reaching the public with their own message, and not somebody else's version of it, is the beginning of that change. Fifty-four public service programs — including those on women artisans, vendors, and professionals — have been produced so far. Three groups of artisans are using the program to promote their art, and numerous organizations such as public health agencies, drug rehabilitation institutions, juvenile authorities, and unions of ex-prisoners are asking for airtime.

"Different but Equal" depends for support on donations since manufacturers of rum, cigarettes, and expensive cosmetics are not sought as sponsors. Last year it received a $5,000 grant from a state wheat enterprise. This year it has received $2,500. Airtime is donated by Radio-Television Dominicana.

Although "Different but Equal" is fairly new on Dominican television, it was chosen in 1977 from among 21 programs (each produced by or directed to Dominican women) as one of two programs that advances the image of women as mature, independent citizens. In a short time, it has gone a long way toward furthering sexual equality.

■ *Sonia Andujar, Producer,* Diferentes pero Iguales, *Santo Domingo, D.R.*

FILMS MADE IN LDCs

The Third-World Moving Images Project — under the direction of Harold Weaver — studies, documents, exhibits, and helps preserve filmed images of Third-World peoples. A small staff with experience in teaching and film-making has created a variety of lecture, viewing, and discussion sessions, as well as for-credit and adult-education courses, all of which it offers to North American colleges, museums, film societies, libraries, and other organizations for a negotiable fee.

The broad concern of the Third-World Moving Images Project is cinema and society. Representative of the Project's programs are those on general Third-World cinema, African film, and Afro-Americans in cinema. Typical of its projects other than conducting showings are organizing workshops and film retrospectives, compiling annotated bibliographies and filmographies, and consulting.

The Project has collaborated with institutions in Europe, Africa, and the Caribbean; and its director invites inquiries and information from developing and developed countries alike. Write Harold Weaver, Third-World Moving Images Project, P.O. Box 119, Amherst, Massachusetts 01002, U.S.A.

Development Communication Report, published quarterly by the Clearinghouse on Development Communication, is distributed free to over 6000 development professionals.

A center for materials and information on important applications of communication technology to development problems, the Clearinghouse is operated by the Academy for Educational Development, a nonprofit planning organization, and supported by the Technical Assistance Bureau of the U.S. Agency for International Development as part of its program in educational technology and development communication.

Readers are invited to submit typed manuscripts of no more than 1000 words and to send in photographs.

A "DISCOVERIES" CONFERENCE ON COMMUNICATIONS

The third international DISCOVERIES conference, entitled "Communication in Human Action," was held in Paris from October 23-27, 1978. Supported by the Honda Foundation, this conference brought together both physical and social scientists from fourteen countries to exchange views on current developments in human communications and to speculate upon future trends.

The DISCOVERIES conference grew out of a three-day symposium held in Tokyo during October of 1976 that gave scientists and thinkers of all nations a chance to meet to discuss vital global questions. An acronym for "Definition and Identification Studies on Conveyence of Values, Effects and Risks on Environmental Synthesis," DISCOVERIES may be roughly understood to mean "discovering what is essential to man's activity in his total environment." A second conference was held in Rome during November in 1977 to gauge the "megacrisis" of population, food, and energy confronting humankind, and a fourth is planned for Stockholm in August of 1979, after which the Honda Foundation expects to entertain proposals for concrete action.

Although much attention in the Paris conference was focused upon the "post-industrial" or "information" societies currently emerging in the industrially advanced countries, the problems of information technology transfer to developing countries were not ignored. At a special session on "Cultural Problems of Technology Transfer" (chaired by Professor Z. Damjanovic, Director of the Center for Multidisciplinary Studies at the University of Belgrade), all participants agreed that latent social effects must be given careful consideration and that the transfer of communication technology should in fact be viewed as the transfer of culture. Professor Donald Ekong, first Vice-Chancellor of the University of Port Harcourt in Nigeria, emphasized the fundamental importance of developing indigenous technical talent and ingenuity; and Professor R. Narasimhan, Director of the Tata Institute of Fundamental Research in Bombay, stressed that technology transfer is most effective between "perceived equals." A.I.D. - supported projects for introducing both two-way and regional educational radio communications in support of rural health programs were described by Ned Wallace of the University of Wisconsin's Center for Appropriate Technologies for Health.

Further information may be requested from Honda Foundation Headquarters, 6-20, 2-chome, Yaesu, Chuo-ku, Tokyo 104, Japan.

■ *Alwyn Scott, Department of Electrical and Computer Engineering, University of Wisconsin at Madison*

COMMENTS ON READERS' COMMENTS

If the 611 respondents to the *DCR* survey enclosed in issue 22 are typical of their fellow subscribers, *DCR* readers are united in spirit and divided on issues. The overwhelming majority find the report of use, even instrumental, and a fair number claim no other publication covers the same territory with an eye to the same considerations. The borders of that territory defy definition by reader consensus, but responses and comments fell into patterns strong enough to give editorial direction.

Preferences for References

The typical *DCR* reader apparently uses the newsletter as a research tool. The request voiced most often was for expanded references. Some readers want *DCR* to carry bibliographies on the theme of each newsletter. Others want a list of references to follow each major article. A greater number simply expressed appreciation for book reviews, references to research and publications from which feature articles are drawn, and the like. Along these same lines, a common request was for publication of an annual index of articles.

Hard Data & Wisdom

The typical *DCR* reader apparently holds opinion in low repute. A helping of opprobrium was heaped upon soft data (called "description," "ephemera," and "over-the shoulder analysis, " among other things). Ironically, however, articles cited by some readers as examples of unscientific thinking were held up by others as models of informed analysis. Complicating matters, some readers made the point that reflective observation is both preferable and in opposition to the straightforward presentation of facts, while others said that the full picture can only emerge from a juxtaposition of the two. (To a few the question is one of style, of academic writing versus journalism.)

But if readers disagree on the distinction between hard and soft data and that between opinion and wisdom, they are in accord as to the relative value of particulars and generalities. Praise of articles on broad subjects came primarily in conjunction with the expression of the need for an overview as a means of making sense out of case studies, while many readers want more case studies and more coverage of exemplary projects.

Grapevine

The typical *DCR* reader wants to be part of an active network. Common calls were for news of career and scholarship opportunities, training courses and seminars, and communication activities at the regional level. Numerous readers welcome the means to contact *DCR* contributors on their own, to contribute the findings of their research, and to write directly for research materials. Others seized the chance to add their colleagues' names to the subscription list. A few, teachers and librarians in particular, asked for extra copies of *DCR* to hand out to students and co-workers.

Presentation

Predictably, the typical *DCR* reader pays careful heed to matters of style and format. The overwhelming majority of those who addressed themselves to the subject favored the continued use of educated but direct English and voiced support for attempts to rid prose of jargon (though a few felt that even more effort should be put into this purge). A few readers lamented the fact that *DCR* is not fully comprehensible to those whose command of English is shaky and to those who are not highly educated, but just as many warned against "trying to become all things to all people" and blurring the editorial focus as a result.

Many readers find *DCR's* print-packed format somewhat forbidding and recommended various remedies for the effect: unjustified margins, new type faces, etc. However, these comments tended to contradict one of the findings of the tabulated part of the survey: that most *DCR* readers want no format changes. Moreover, many readers cited the shortage of information on development communication as a sort of moral argument for retaining the present format, however congested it might seem to the architectural eye. More specifically, some readers suggested including a table of contents, and many recommended featuring somewhat more and somewhat shorter articles in each issue.

Two Clienteles?

The typical *DCR* reader seems to place professional identity before ethnic or national identity. The strong presumption behind readers' comments was that communicators in one part of the world stand to learn plenty from the experience of those in the opposite hemisphere. But some differences between respondents inside the U.S. and those outside the U.S. (the majority by a small margin) did show up. U.S. subscribers, for example, appear somewhat less willing as readers to transfer findings across sectors; conversely, their requests for information and articles tended to be more specific. They also showed more interest in costs and cost-effectiveness than did their counterparts.

LDC and other non-U.S. readers were more likely to append written comments to the survey forms. Naturally, they were also more likely to ask for the publication of *DCR* in languages other than English

DEVELOPMENT COMMUNICATION REPORT (DCR)
Reader Survey Results*

- Does your work involve problems specific to a sector (agriculture, health, education) or general functions in education and communications that transfer across sectors?
  (140) education (222)
  (40) agriculture (101)
  (45) nutrition (61)
  (39) population (43)
  (63) health (69)
  (149) cross-sectoral emphasis (147)
- How do you spend most of your work time?
  (81) policy-making (144)
  (135) project planning (231)
  (128) project administration (189)
  (39) supervising field-workers (120)
  (164) evaluation/research (210)
  (79) message design/production (159)
- How do you read *DCR?*
  (72) In depth (137)
  (148) Selectively (211)
  (22) File for later use (35)
- Do you share the publication with your colleagues or students?
  (111) Often (192)
  (113) Sometimes (121)
  (13) Never (9)
- How have you used information from *DCR?*
  (158) in informal discussions with colleagues (120)
  (60) in formal meetings (76)
  (78) in class with your students (109)
  (194) as a source of information leads (258)
  (70) in project design/evaluation (122)
  (38) as reprint material (63)
- How would you rate the overall utility of *DCR?*
  (158) Very Useful (240)
  (114) Somewhat useful (124)
  (4) Useless (10)
- Do you read feature articles in *DCR* that deal with development sectors other than the one in which you work?
  (49) Always (83)
  (130) Often (176)
  (60) Sometimes (106)
  (2) Never (5)
- Would you like to see more pictures and graphics in *DCR*, or would you prefer as much text as possible?
  (43) More pictures (73)
  (81) As much text as possible (107)
  (106) Leave *DCR* as is (145)

HOW DO YOU RATE THE FOLLOWING TYPES OF INFORMATION?

- On major issues
  (171) Very useful (216)
  (100) Somewhat useful (122)
  (1) Useless (1)
- On applications in specific sectors
  (149) Very useful (214)
  (97) Somewhat useful (124)
  (2) Useless (3)
- On specific communication methods and techniques
  (128) Very useful (209)
  (102) Somewhat useful (126)
  (2) Useless (2)

U.S. responses to the left of item, non-U.S. responses to the right.* **TOTAL: 611 as of 12/1/78

(especially Spanish). Finally, as a group, they tend to set greater store by "how-to-do-it" articles than U.S. readers do, probably because their access to such is restricted.

Conundrums

Some readers asked for what cannot be given, others for what has already been published. In the first case, quite a few readers identified their own "biases" before asking for highly specific articles slightly outside the compass of *DCR* (on management techniques for running industries that employ fewer than 50 people, for example). In the second, respondents were sent back issues that met their needs.

A perplexing number of readers asked for articles on educational technologies. Apparently, something other than the media in service of development was meant, but just what was not spelled out. (Perhaps an article on the nomenclature of educational technology and development communication is in order.)

Roughly equal numbers of readers asked for analytical descriptions of and cost information on technologies and for exposés of the problems associated with technology transfer. (Side-by-side presentation may solve this poser.)

New Directions

A handful of readers remarked that they appreciated the "evolution" of *DCR*. Those who returned the survey will find their own imprint on that process. A miniaturized table-of-contents has already been added, as has more bibliographic material. "Calls for Copy" will contain readers' requests, and the weightier and more controversial suggestions will be tried out one at a time.

To the reader who said of *DCR* "We like it, we use it, we share it" goes the last word on the survey: "We withhold opinion on it, we use it, we share it." ■ *K.C.*

MESSAGE DESIGN

Stanford University's Institute for Communication Research will conduct a workshop on the design of development communication messages from August 14 to September 1 of this year. Intended for Third World educators, extension agents, broadcasters, film-makers, graphic artists, and media researchers working in all development sectors, the three-week course will cover development communication theory, learning theory, the art of persuasion, and message-evaluation techniques. Coursework will revolve around lectures, role-playing sessions, and the analysis of case studies.

Applicants must bear the full costs of tuition, travel, and accommodations and must include the following information on their applications: name, address, age, academic record, professional record, and a rationale for inclusion in the workshop. Applications (due April 1) and further inquiries should be addressed to Bella Mody, Institute for Communication Research, Cypress Hall, Stanford University, Stanford, CA 94305, U.S.A.

THE NFE INFORMATION CENTER

The NFE Information Center seeks to put people in touch with resources and to acquaint them with ideas related to nonformal education for development. Begun in 1974 and funded by the Agency for International Development, the Center serves a network that now embraces 3,600 persons in 126 countries.

Besides responding to about 75 requests weekly, the Information Center's staff produces a quarterly newsletter, the *NFE Exchange*. Each issue is topically-oriented — e.g., front-line development workers, skills-training programs for adults, mobilizing youth for development, NFE and entertainment, women in development — and each contains highlights of projects around the world plus an annotated bibliography. The Center also makes available, on an exchange basis, more than 20 publications on nonformal education prepared by study teams at Michigan State University.

To receive more information or to request a subscription to *NFE Exchange*, write to Joan M. Claffey, Director, NFE Information Center, Institute for International Studies, College of Education, Michigan State University, East Lansing, Michigan 48824, U.S.A.

TV JOURNALISM FELLOWSHIPS

VISNEWS, the world's largest television news agency, set up in 1978 an educational trust fund to commemorate its 20th anniversary of service. Money from this trust will be used to enable three or four TV journalists per year to spend three months abroad studying techniques for gathering and presenting TV news.

Fellows will be selected by an independent board of trustees directed by Jean d'Arcy, President of the International Institute of Communications, from those countries with national or regional television systems. Journalists from the U.S.S.R., the U.S.A., Canada, South Africa, Japan, Australia, and New Zealand are ineligible, however.

Winners of the competition will visit organizations and studios in London, New York, Philadelphia, Toronto, Edmonton, Wiesbaden, and Geneva. They will become acquainted with various methods of handling news material and compare several broadcasting systems. They will exchange ideas with colleagues and write reports on the implications for their native countries of the growth of electronic journalism.

Fellows for 1979 have already been selected, but applications for the 1980 competition, as well as requests for additional information, can be addressed to Secretary to the Trustees, VISNEWS Ltd., Cumberland Avenue, London NW10 7EH, England.

EDUCATED CHOICES/ A GUIDE

The Development Support Bureau of the Agency for International Development has made available to *DCR* readers a limited number of copies of *Instructional Technology in Developing Countries: Decision-Making Processes in Education* (1976) by Stuart Wells. Please contact the Clearinghouse if you are interested in obtaining a copy.

ARE YOU LISTENING?

Martha Stuart Communications, Inc., a New York-based video production company, embodies well-articulated minority views on the media's place in development. The video artists who make up Ms. Stuart's band produce and teach others how to produce broadcast-quality programming, most of it shot in improvised or borrowed studios. Rather more mainstream than their approach, their philosophy centers on making informed choice possible and their strategy involves the extension and multiplication of the opportunity to know and to do.

The group's method is to allow ordinary people a public or semi-public say (the choice is often theirs) on concerns that directly affect their lives — family planning, sex roles, work conditions, childbearing, etc. — as a means of legitimizing the issues and of arousing peer support. Through hands-on training in video technique and equipment use, the videographers also share "the means of production" with local counterparts, who then carry on the interactive process.

Ms. Stuart is best-known for her U.S. series "Are You Listening?" The series consists of tapes of frank talks — led with spirited candor by Ms. Stuart, whose strong but welcome presence in her videotapes represents another departure from the going wisdom on videography — with American subgroups about what it is like to belong to the groups. In other words, Stuart asks black teenagers about being a black teenager, domestics about life as a domestic, and women who have had abortions about having an abortion.

Internationally, Stuart's group has worked in conjunction with family-planning efforts in Colombia, Ethiopia, Jamaica, and elsewhere. It has also conducted training workshops for workers in agriculture, health, and literacy.

Further information about Martha Stuart Communications can be obtained from Dorinda Hoarty, 66 Bank Street, New York, N.Y. 10014, U.S.A.

CALL FOR COPY

DCR's editor invites readers to submit manuscripts on the use of computer technology in communication and education in developing countries, software development, skills-training activities involving use of the communication media, learning games, innovative literacy efforts, and health-information campaigns.

PROJECTS IN BRIEF

BAI — ON THE AIR

Rebekah Mae Qualls
c/o Bureau of Animal Industry
Region I
Dagupan City, Philippines

Date submitted to CDC: October 28, 1977

FOCUS: This weekend radio program has a twofold objective: to educate livestock raisers about projects of the Philippines Bureau of Animal Industry and the government benefits available to them, and to teach farmers how to raise larger and healthier stock. Free literature about topics such as vaccination programs and animal nutrition is offered on each show. The program, which is now broadcast in English, needs someone to repeat the radio message in local dialects.

SUBJECT AREAS: Agriculture, Nutrition

TYPE OF MEDIA: Radio, pamphlets

TARGET AUDIENCE: Literate and illiterate adults and youth, both rural and urban

SCALE OF PROJECT: Regional

PROJECT STATUS: Begun in 1977; in implementation stage as of 10/77

SPONSORING/COOP. AGENCY: Bureau of Animal Industry; Department of Public Information (DPI Radio)

POPULAR THEATER EDUCATION

Ross Kidd
Botswana Extension College
Private Bag 004
Gaborone, Botswana

Date submitted to CDC: May 29, 1977

FOCUS: The purpose of this project is to get extension workers in agriculture, community development, and health education to use popular theater as part of their extension work and as the basis for integrated campaigns on specific development subjects. Such use of popular theater has proved an excellent technique for overcoming the literacy barrier and for attracting the interest of participants in becoming actors and planners.

SUBJECT AREAS: Agriculture, Health, Nutrition, Population/Family Planning, Community Development, Nonformal Education

TYPE OF MEDIA: VTR, pamphlets, posters; plus drama, puppetry, dance, and poetry

TARGET AUDIENCE: Illiterate rural adults

SCALE OF PROJECT: National

PROJECT STATUS: Begun in 1974; in implementation stage as of 5/77

SPONSORING /COOP. AGENCY: Botswana Extension College and the Ministries of Health, Agriculture, and Education

CAPACITACIÓN LABORAL URBANA — ADULT EDUCATIONAL-VOCATIONAL PROJECT

(Susan) Lynn Johnson
Peace Corps
c/o U.S. Embassy San Salvador
El Salvador, Central America

Date submitted to CDC: June 30, 1977

FOCUS: This vocational-educational program for adults focuses on six occupational areas: tailoring, sewing, radio and TV repair, cosmetology, cooking, and auto mechanics. A video portapak unit was used to help train teachers, develop course curricula, teach interview techniques, aid in job orientation and counseling, and provide communication between the Ministry of Education and the vocational classes. Project personnel hope to expand the use of the portapak system, especially to rural areas where educational television has not been very successful. The project advisor welcomes information about the use of video portapak units in developing countries.

SUBJECT AREAS: Education, Industry

TYPE OF MEDIA: Cassette recorder, reel-to-reel recorder, VTR, television, pamphlets, posters

TYPE OF AUDIENCE: Literate and illiterate adults, both rural and urban

SCALE OF PROJECT: Regional — 4,000 persons

PROJECT STATUS: Project to run from March 1976 to March 1978; in implementation stage as of 6/77

SPONSORING/COOP. AGENCY: AID; Ministry of Education, El Salvador

ABONO YOUTH SELF-RELIANT DEVELOPMENT

Tsala Minkengue
I.P.A.R.
Box 4135
Yaounde, Cameroon

Date submitted to CDC: September 20, 1977

FOCUS: Members of this youth cooperative are interested in improving the agricultural methods of farmers in their region through the introduction of fertilizers and the extension of pig and chicken farming. An attempt in 1974 failed because of lack of adult support. Members of the cooperative are seeking ways to use communication media — radio, cassette recorders, and print — to put an effective and convincing project together. They need funding.

SUBJECT AREAS: Agriculture, Health, Nutrition, Community Development, Education, Marketing/Coop.

TYPE OF MEDIA: Cassette recorders, radio, filmstrips, newspapers, books, pamphlets, posters, billboards

TARGET AUDIENCE: Illiterate rural adults

SCALE OF PROJECT: 12 villages

PROJECT STATUS: Youth now working with the community, but need funding to continue project

SPONSORING/COOP. AGENCY: None

These project descriptions were written by Barbara O'Grady of the Academy for Educational Development using information submitted by readers in response to the Project Information Request in Issue 18 of DCR. *Future newsletters will contain four project descriptions an issue until the series is completed. The full series is available from the Clearinghouse upon request.*

Toward The Definition Of Broadcasting Training Needs — Some Tentative Answers

Part I of this article, "Toward The Definition Of Broadcasting Needs — Some Systematic Questions," appeared in DCR *Issue 24. Both parts are adapted from Chapter 5 of* Training for Broadcasting in Asia *(AMIC, 1977) and reprinted with the permission of the Asian Mass Communication Research and Information Centre in Singapore.*

II. The Crucial Problems

1. What if entry-level trainees turn out to be unsuitable or drop out of the system?

Selection procedures need to be improved. Pressures for appointments based on political connections or personal friendships can be resisted only if selection criteria are objective. Although particular screening devices need to be validated by checking the subsequent success of the candidate, the usual "paper credentials" based on school examinations or degrees can be supplemented by tests of knowledge and aptitudes relevant to the position under consideration. To screen potential programmers, use tests of awareness of current issues, language skills, and reading comprehension, and require a writing sample under controlled conditions. Nothing substitutes for a rigorous interview conducted by several persons in which the candidate is required to deal verbally with the kind of problems confronted on the job.

2. How can we keep trained staff from moving out of broadcasting into other jobs?

Low salary scales in broadcasting are, of course, a basic problem. Continued stress on professionalism and the important role of the broadcaster in social development should improve this in time. But, for now, the motivation of the staff is of major importance. "No room to be creative" is one of the most frequently heard complaints. Encouraging experiments, recognizing creativity and inviting staff participation may help curb boredom. So might the interchange of radio staff and television staff at the same wage levels.

3. What if the staff does not seem to profit much by visits from out-of-country specialists coming in to conduct training workshops?

Perhaps the workshop should not be conducted in English. Even though the trainees are nominally able to use the language, the strain of listening, especially if there are dialectic and idiomatic differences, can kill interest. Also, the trainer should avoid making false assumptions about the background of the audience, and should take care not to speak either above or below the appropriate information level. Further, all available staff members should not be placed in a single training session; their backgrounds, interests, and needs are so diverse that a trainer cannot possibly produce anything meaningful to the entire group. Last, irregular attendance at workshop sessions reflects the pressure of taxing work schedules or social interests and suggests that training should be conducted outside the normal work environment.

4. What if our people come back from overseas training and complain that we don't have proper equipment?

Special care must be taken to motivate trainees to apply the acquired skills to less sophisticated technologies. Stress on the effectiveness of the end product and on the element of individual creativity may remove some of the emphasis on specific equipment. In-country training with existing technology should have highest priority and more sophisticated training in-country or abroad should be synchronized with the development of the local technology.

5. Where can we get qualified trainers?

Of course, trainers can be imported from either developed or develping countries. But trainers from abroad are not qualified to conduct training if they just superimpose their expertise on local conditions and systems. Instead, they have to adjust (reduce, change, augment) their expertise so it can be absorbed and used in the national systems. Trainers have to be able to analyze and recognize what by their own standards are local shortfalls. They must adapt to local work rhythms, ways of thinking, authority hierarchies, and mores.

6. How can we avoid wasting training opportunities on people who are assigned to jobs that do not require use of their new skills?

a. Care in the selection of the training institution and program will help insure relevance and thereby increase the chance that the training will be used.
b. The broadcaster must evaluate the talent of trainees carefully before sending them for training. Both the training investment and the potential trainee's psychological welfare are at stake in this matter.
c. "The Peter Principle" should be considered. The trained individual who is sometimes promoted out of his area of competence should be returned to the job for which he was trained.
d. Management should be "trained" for precise tasks.
e. The civil service system should be modified so policies, job descriptions, pay scales, etc., that prevent effective utilization of trained personnel are eliminated.
f. Trainees sent for special training should have built into their contracts a mandatory period of well-defined service.
g. If training can be made specific for various levels of expertise, the trainee is more likely to be placed where the training will be most used.

7. How can we involve the broadcaster in face-to-face confrontation with his audience so that he becomes vividly aware of its needs and interests?

a. The broadcaster's job should include mandatory field visits to villages or metropolitan areas outside his normal ambit.
b. Alternatively, he should be allowed "X" days per year to travel (expenses provided) to visit his audience.
c. Extension workers both coming and outgoing should be used to bridge the gap between the studio and the field.
d. Villagers can be recruited and used as broadcasters.
e. If there is a system of rural listeners' clubs, the broadcaster should visit them to establish personal contacts.
f. Listener clubs can be stimulated by programming that features names, birthdays, etc., and studio "parties" can be arranged for events of local importance.
g. Field production of programming is perhaps the basic answer; program production should be taken out of the studios to where the people are.
h. Decentralized production — regional production of programs that are then fed into the national network — can be done at low cost with new transmission facilities if the system is so designed from the beginning. ■

Dilemmas (Continued)

landowner was not influential among most of the people but merely represented one of several factions. By taking his advice and occupying his building we had, to all appearances, become his clinic. Moreover, the nurse we appointed was from a different language and culture area, and she was never able to become a part of the community. Then too, despite initial cooperation with the government, we found ourselves duplicating government efforts.

In the first instance we failed to provide for follow-up service and care, which we could have done by training a concerned local person to provide the necessary continuity between clinic visits. And, indeed, we knew just such a person in this particular village. The intelligent young daughter of the librarian had helped us in many ways, and we should have made her part of our team. We could have had a continuing presence in this village. In turn, she could have checked up on the condition of the patients we saw at the clinic, advised them about what to do if they were not getting well, and notified us of serious problems.

In the second, we allowed the persuasiveness of an influential but unpopular landowner and the appeal of convenient physical facilities to deflect us from our original purpose of providing health care to the poor and those who had no access to other medical services. To reiterate, we made a simple but consequential mistake when we failed to enlist the continuing help of a local person. ■

Dilemmas in Country X: Candid discussions about failures

The following Dilemma, *contributed by Dr. Ronald S. Seaton of the Mission Hospital in Maharashtra, India, is not specifically concerned with the communication media or nonformal education. But it does focus on a problem that communicators and nonformal educators share with workers in every sector of development, the failure to engage local people in liaison and support work. For that reason and for the sake of those attempting to enlarge the concept of development communication, it is featured here.*

(The editor invites readers to submit reports for this column. Author's names — as well as those of the people, agencies, and countries involved in the projects — will be withheld upon request.)

Village clinics, the traditional outreach of mission hospitals and of private and government attempts to provide medical services in rural areas, have in recent years come under increasing criticism for failing to meet the health needs of developing countries. Why? Related incidents from my own experience in a rural clinic may give an inkling.

Once every two weeks our hospital team used to travel by Jeep the eight miles of dirt road (dusty or muddy, according to the season), set up a "clinic" in the town's small library, examine those in need of care, dispense basic medicines, and occasionally prescribe more sophisticated treatment or take a seriously ill patient back to the mission hospital. Regular bus service connected this village and our town, but usually the villagers preferred to wait for the doctor to come to them.

On one "clinic day" I examined a man who complained of a cough and low-grade fever. Nothing in the examination indicated anything serious, and I gave him medicine for treatment of his symptoms. Two weeks later, when a different doctor from the hospital attended the clinic, the patient did not come, even though patients are habitually advised to return to the clinic if they don't improve and, we later learned, this man was worse. When I returned to the village after four weeks, the man's relatives asked me to see him at home as he was unable to come the quarter mile to the clinic. I found the patient dying of advanced pulmonary tuberculosis and sent him immediately by Jeep to the hospital for emergency treatment. Only with intensive and costly care did the patient recover.

This incident and other shortcomings of the village clinic prompted us to try a different procedure when a new territory opened up not far from our hospital. We consulted the territory's Minister of Health, offering our services wherever they might be needed. Since one northern area near our base hospital had almost no medical facilities, the Health Minister welcomed our offer to work there. We went weekly on bazaar day to a small town, and at first worked in a small room in the center of town.

We were soon approached by a wealthy local landowner whose father had long ago been a patient of our mission hospital and who was eager to provide a hospital for his village. He persuaded us that we could serve more people more efficiently if we moved from the crowded clinic in the center of the market district to more spacious quarters in a building he owned and would provide rent-free on the edge of the village.

In the new location we had a waiting room, an examining room, quarters for a permanent full-time nurse whose duties would include case-finding and follow-up treatment, and even a small operating room. Yet, although we soon began to see more patients, they were not the very poor and socially disadvantaged for whom we had come in the first place. More and more, those who took advantage of our improved services were the well-to-do who were bypassing the adequate facilities and competent doctors in their own cities and larger towns to come to the foreign doctor. And their presence even more than the distance made the ordinary villager unwilling to come.

Politically, we were naive. It was some time before we realized that the wealthy

(Continued on page 15)

at issue . . .

Development Communication Report

Clearinghouse on Development Communication

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development communication report

1414 22nd Street, N.W.
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April 1979
No. 26

COMMUNICATION SATELLITES: EXPERIMENTAL & OPERATIONAL, COMMERCIAL & PUBLIC SERVICE

The 1970s have seen a tremendous upsurge in the use of commercial communications satellite systems for international and domestic communication. Before the 1970s only INTELSAT had operational communications satellites in geostationary orbit. The nine satellites of the INTELSAT I, II, and III series were of low capacity and had limited design lifetimes (1.5 years for INTELSAT I, 3 years for INTELSAT II, and 5 years for INTELSAT III). These satellites provide international communications exclusively.

Canada became the first country to establish a domestic communications satellite system using the geostationary orbit by launching ANIK A-1 in 1972. The United States launched its first commercial communications satellite in 1974, Western Union's WESTAR. The only other countries to date operating commercial communications satellites are the USSR and Indonesia, though India, Colombia, and other countries are actively planning to put domestic communications satellites in geostationary orbit.

In 1974, Algeria was the first country to lease capacity from INTELSAT for domestic operations. To date over a dozen countries are using leased INTELSAT capacity. Also, many plans for regionally owned satellite systems (including the Scandinavian NORDSAT, the

(to page 2)

SATELLITES IN DEVELOPMENT: THE PACIFIC EXAMPLE

Institutions in the Pacific have for several years shared an audio channel on NASA's ATS-1 satellite. Now they face two new choices and tasks: they must determine their communication requirements and make the transition from experimental uses and demonstrations to operational services.

Other social-service users have faced similar transitions. In the U.S., Alaska has instituted commercial satellite service and the Appalachian Regional Commission plans transition for its ATS-6 educational satellite network. In Canada some experimental users of CTS will shift to the use of the hybrid Anik-B system. India plans an operational satellite including S-band capacity for continuing SITE-type educational TV.

The needs and institutional environments of the Pacific differ from those of North America and the Asian Subcontinent, but the paths to operational services cross in several places. The planning approaches here proposed for the Pacific may, in short, prove applicable elsewhere.

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SPACECOM — A NEW CONCEPT IN SATELLITE COMMUNICATION FOR THE THIRD WORLD

Several apparently contradictory observations led EUROSPACE to formulate the idea of SPACECOM — a concept that has started to provoke discussion. First, there was the conviction that the main new requirements for telecommunications and television from 1980 onward would arise from internal national planning in LDCs. Second, economic analyses of several existing or envisaged domestic systems show that in many cases satisfying domestic communication requirements by using a regional satellite system common to several countries is more effective than using a strictly national system — even though international cooperation would entail the time-consuming formation of an international decision-making organization any of whose members could unilaterally block action. Finally, their high capacity enables satellites to satisfy many communication requirements simultaneously, as INTELSAT V and the ESA H-SAT have done, even though the costs of such satellites are prohibitive for many LDCs on an individual basis. (For them, the attraction of high-power satellites is linked to the possibility of using small ground stations, which are relatively inexpensive and can thus be deployed in large numbers.) These three considerations have convinced EUROSPACE of the need for setting up an

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SATELLITE APPLICATIONS FOR PUBLIC SERVICES: CANADIAN EXPERIENCES WITH WORLDWIDE IMPLICATIONS

With the launch of Anik A-1 in 1972, Canada became the first western nation to establish a commercial domestic satellite system. Three satellites of the Anik-A series today provide thin route telephone, radio, and television services to the sparsely populated regions of the North, television program transmission to major network distribution centers, and heavy route telephone circuits between the east and west of the country.

Canada's developing domestic space industry also created the Communications Technology Satellite, Hermes, to test several new concepts in spacecraft design. Hermes has become the main vehicle used by various Canadian public service institutions to assess the application of satellite communications to their proper objectives. While to date the commercial and experimental satellite programs have developed along separate lines, Canada's Anik-B satellite program, which began in February 1979, was designed to allow and develop the transition from experimental to operational satellite systems.

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ARABSAT, and the Andean regional satellite systems) have been drawn up, though none is yet operational.

Like commercial satellite systems (which are being used for commercial telephone, radio, and television distribution), experimental satellites featured strongly in the 1970s. These satellites were built by national space R & D programs to test new frequencies, high onboard power levels, new stabilization techniques, and so forth. At this time it is not likely that many — if any — more of the experimental satellites will be built in the western world.

The passing generation of experimental satellites was used to test the application of satellite communications in health-care delivery, education, rural development, and other public service applications. With the era of experimental satellites drawing to an end, finding a place for these applications in the commercial satellite world will demand the integration of public service applications into the regular telecommunications environment, either through subsidization or through the dedication of new satellite systems to public service applications.

The 1970s have also seen abundant rhetoric, studies, and plans on how communication satellites could solve the information and communications needs of rural areas in Third World countries. For a number of reasons, however, the gap between what is possible and what is actually economically or politically within reach has not been bridged. First, many of the initial approaches focused on the use of communications satellites in individual sectors, primarily education; and making the required investment in hardware alone — for the space segment and ground stations — drained the budgets of the agencies involved. Clearly, it now seems, operating a satellite communication system should be a multi-sectoral undertaking, part of the overall telecommunications system of a given country. Only when hardware, operating, and maintenance costs are shared are they tolerable.

Also, investing in a domestically owned satellite (DOMSAT) is uneconomical for many countries because they cannot utilize the system's total capacity. To do so, most sectors would have to be ready to utilize the capacity. This, in turn, would require investing massive financial and human resources in software development, utilization planning, and the like. A phased approach, using international or regional systems initially, appears to be the most attractive solution, since it would enable countries to build up experience with satellite-based telecommunications and service-delivery systems gradually. It would also keep the initial investment costs down, since the cost of the satellite launch and for operational personnel can be shared. The decision to own and operate a DOMSAT system could come later and reflect considerable experience.

A second economic problem also stems from precedent. Early proponents of satellite systems advocated the use of direct television to every school, village square, or household, or the introduction of computer-assisted education in remote village schools. Although these proposals made economic sense at one level (cost-per-learner), the economic, institutional, and political tasks of making such proposals a reality are flanked by problems related to appropriate software production, effective utilization support, and the need to restructure the sectors to make the most of satellite-distributed programs. Also, satellite-based programs are only as effective as the available software and utilization components. Those skeptical of the effectiveness of educational communications are particularly vocal about satellites because satellites command so much attention and so many public resources.

Another factor contributing to the "applications gap" is the focus to date on the more technologically sophisticated applications for educational and rural development. The potential effectiveness of telephone systems or radio has not featured dominantly in the discussion on satellite applications for socioeconomic development. Yet, telephones and radio have great potential, as a "first step" at relatively low costs, even though experience with projects based on use of these media is limited. Last, the commercial satellite systems available at present do not feature technical characteristics that answer in a cost-effective way the needs of countries for low-volume rural communications.

A new generation of communications satellites will be required if the benefits of communications satellites for the rural populations are to be optimized. These satellites could be domestically owned, or shared regionally. However, the advent of new satellite technologies will not itself close the application gap. The planning and introduction of satellites has to be accompanied by program analysis and applications planning in sectors such as health care, education, and agriculture. Resources and time have to be allowed for developing ways to enhance coordination and cooperation. Above all, the development phase must be one in which identified communications needs and applications are linked to a nation's abilities to foot the bills, provide technical and service manpower, make institutional arrangements, and rely on its existing public service delivery systems. Such analyses may result in the promotion of a national rural telephone system that could be used effectively by the public service sectors or in the promotion of direct in-school television programs for the whole nation. However, decision-making without multi-sector analysis will probably lead straight to disappointment.

■ *Anna Casey-Stahmer, Academy for Educational Development*

SATELLITE GLOSSARY

audio conferencing: linking several sites with the same frequency for interactive use

demand assignment multiple access (DAMA) capability: a method of assigning a channel to a user only when it is needed, so that channels may be shared by many users or sites

downlink: transmission from space to earth (and equipment to do this)

duplex circuit: a two-way channel

ground segment: the facilities on the ground, earth stations

long lines carrier: organization responsible for carrying long distance telephone traffic

simplex circuit: a one-way channel

space segment: the satellite

thin route: low density telephone service

transponder: satellite transmitters/receivers

uplink: transmission from earth to space (and equipment to do this)

A New Satellite Initiative

A new initiative by the United States is aimed at helping developing nations to use available satellites for development communications. U.S. Ambassador John E. Reinhardt at the UNESCO 20th General Conference in November of 1978 announced "a major effort to apply the benefits of advanced communications technology — specifically communications satellites — to economic and social needs in the rural areas of developing nations." He elaborated: "This program will . . . enable nations in the developing world to disseminate valuable information to people in remote areas. My Government — in cooperation with officials in developing areas — will work to design projects to promote basic literacy for children and adults, and to share information on basic health care and other subjects vital to rural development . . . ."

"We expect to learn much from this new project. But it is much more than a technological demonstration. It is a committed U.S. effort to build communication skills and experience which will enable developing countries to strengthen their own global, regional, and national communications systems. The programming will be managed by the recipient countries themselves, to help meet the basic human needs priorities which they identify. The project will be aimed at building permanent communication technology skills in these countries. At its conclusion, all aspects of management and control will be turned over to the recipient nations, and throughout all of this, we hope that the project will develop expertise that will be transferable to other parts of the world."

Pacific Example (continued)

Explorations of satellites' potential in the Pacific began in 1971, when NASA satellites became available to institutions serving Pacific people. For conferences on various issues, the PEACESAT network now links representatives of far-flung Pacific isles. Of particular interest is the University of the South Pacific's use of the ATS-1 to administer its extension program by linking scattered extension centers. The system makes possible administrative conferences among staff members; tutorials between students taking correspondence courses and professors teaching at the main campus in Suva, Fiji; and special conferences on regionally pertinent development issues. Other agencies occasionally using the USP network in the South Pacific include the World Health Organization, the International Labor Organization, and the South Pacific Commission.

Proven Potential and the Pacific Prospect

The ATS projects, particularly the audio-based projects on ATS-1, stand as proof that communication satellites can be used effectively in social-service delivery. Properly considered experimental, the projects opened the way for the satellite-using institutions to make good on their mandate to provide ongoing services, a challenge that now requires a timely and well-planned transition to a system including the features that were most valued during the demonstrations.

Here the Alaskan satellite experience sheds some light. Once ATS-1 had proved successful in health-care delivery in isolated regions, the U.S. Public Health Service increased its efforts to make reliable communications available to all Alaska's health-care providers. At the same time, public pressure to provide reliable statewide telephone service was building. Thus, the state legislature allocated $5 million to purchase 100 earth stations (later increased to 120), which were installed and maintained by the common carrier, RCA Alaska Communications, and now operate with the RCA SATCOM satellite.

In Alaska, the 4.5 meter C-band terminals in the villages provide both basic telephone service (through a village public telephone) and a medical communication channel. Taking advantage of the lessons from ATS-1, the Public Health Service specified a conference system with four frequencies allocated to provide links from villages to regional hospitals. Each village unit consists of a push-to-talk microphone and channel selector. The consultation system can be turned into a statewide information system simply by requesting all sites to select the same channel, while special training networks can be created by offering programs to target groups on a specified channel. A fifth channel is available for hospital-to-hospital communication only.

Of particular relevance is the general approach taken in Alaska. A transition was made from an experimental to an operational system through cooperation between the social-service institution (the Public Health Service), the state government, and the commercial carrier. This model of institutional cooperation should be considered in a broader context and for more widespread adoption.

The Institutional Environment

In the Pacific as in Alaska, telecommunication planners must work with three major institutional groups. One group is made up of the providers of international communications (e.g., INTELSAT, the international carriers, and, on an experimental basis, NASA). A second comprises the domestic telecommunications organizations (e.g., the post and telecommunications authorities of each country and other domestic carriers). The third group consists of the users, primarily institutional, both domestic and regional/international. Domestic users might include health ministries that need to communicate with decentralized health clinics and to coordinate emergency evacuations, and agriculture and fishing ministries that need to keep in contact with their field personnel. Private domestic users might include producers and suppliers who need to get goods to and from markets. Regional institutions — in the Pacific, most notably those institutions involved in the demonstrations — might include organizations charged with training, disaster relief, disease prevention and control, community development, and the like.

For many institutions, identifying their telecommunication requirements will not be easy. Those with experience using communications will have some grasp of the potential benefits of telecommunications for their activities, but they still may not know enough to specify the exact requirements or calculate the value of communication in terms of how much they would be willing to pay for communication services. Pilot projects, especially those using INTELSAT to link sites within a single nation or region, represent one means of gaining further experience.

INTELSAT has recently begun a study of user needs through 1989. Says INTELSAT Director General Santiago Astrain: "This study will examine not only an extension of the regular transponder leases, but other types of service capabilities, including higher EIRPs. These studies may show ways the INTELSAT could provide educational, health and other social services, and will examine the possibilities for such new services on either a shared satellite system or on separate systems designed to meet the particular needs of countries or even regions of the world."

Several nations and territories in the South Pacific now use INTELSAT for international communications, including Fiji, Nauru, New Caledonia, Tahiti, and Guam. Other Pacific island nations are likely to install INTELSAT Standard B stations in the next few years, following the example of Tonga in 1978. These INTELSAT stations provide reliable communications within the region and with the rest of the world. Investments already made or planned for these facilities can provide increased socioeconomic benefits if the channels are accessible to public service users. For example, the University of the South Pacific may require a block of evening time to link all extension centers in countries with INTELSAT earth stations. For this kind of application, a single simplex voice channel shared by all sites would be required. Demand-assignment techniques would allow the same frequency to be assigned to all sites. A "bulk use" or "off-peak" rate would make it attractive to social-service users to use spare capacity for this type of application.

The installation of satellite earth stations for reliable international communications may, however, leave some countries and territories with more reliable international than domestic communications. To serve the development needs of the Pacific, reliable telecommunications must be available to individuals and institutions *within* each country as well. Again, satellite technology, probably in conjunction with terrestrial radio links, may be the answer. However, even the INTELSAT B stations will be too large and expensive for domestic rural communications; small antennas similar to those in use in Alaska may be more appropriate. INTELSAT's offer to allow demonstrations of smaller earth stations may give Pacific nations the opportunity to explore this technology at minimum financial risk.

To make the transition to operational communication services that are suitable for public service as well as private use, the various institutions identified above must be brought together. The gap between the technical planners and the users will have to be bridged. User institutions will have to identify their communication requirements explicitly and estimate realistically how much they can pay for communication services. Telecommunication planners will have to explore technical options and take a creative approach to developing and implementing systems to meet the Pacific region's needs.

(Bibliographic references are available from the author.)

■ *Heather E. Hudson, Academy for Educational Development. This article is adapted, with permission, from a longer report published in* Pacific Telecommunications Conference Proceedings, *D.J. Wedemeyer and David L. Jones, eds., Institute of Electrical and Electronics Engineers, Honolulu, Hawaii, 1979.*

"Selected Bibliography on the Utilization of Satellites for Educational Purposes," (Document #424), can be obtained from UNESCO's Division of Structures, Content, Methods, and Techniques of Education, 7, Place de Fontenoy, 75007, Paris, France.

SPACECOM (continued)

effective organization capable of purchasing systems and leasing their capacity according to the needs of various countries. However, this decision makes other decisions necessary. For example, should a new organization be set up or should the "domestic" services provided at the moment by INTELSAT be used and developed? Can INTELSAT satisfy the future requirements and resolve the contradictions that have just been raised?

As a talking point, consider a hypothetical entity called SPACECOM, which could be independent of but complementary to INTELSAT and which exists to help countries identify, analyze, and resolve economically their already urgent and future telecommunication problems. What could such an entity provide to the countries of the Third World?

It will be assumed, on the basis of the points of view most often expressed by official national telecommunication bodies, that SPACECOM should be a non-conventional commercial company, controlled by these bodies but at the same time open to external investment. SPACECOM's contribution to the solution of Third World telecommunication and television problems, especially with respect to the development and operation of the space sector of the systems, could thus be summarized as follows:

- to group local financial capabilities and contribute external financial means (own share capital and loans);
- to enable a country to tailor its investment to its requirements and/or means;
- to form a corporate body and use the effective decision-making procedures employed by a commercial company, while at the same time eliminating the risk of unilateral decisions inherent in all purely domestic systems;
- to make fuller and more efficient use of the capacity of the space sector;
- to undertake secondary activities at the request of its shareholders (in the remote-sensing field, for example) and to provide by sale or lease parts of the ground sector of the telecommunication systems, or yet again to transfer technology to industry in Third World countries.

While limited at the moment to developing only the telecommunications space sector, an organization like SPACECOM can offer a genuine economic benefit both to its financers and to its users. During 1978, EUROSPACE conducted a field survey in which questionnaires were circulated in more than 80 countries to 150 organizations (PTT and information bodies). At the same time, 31 countries representing 60 organizations were visited. Fifty-four significant replies were received, of which 51 contained expressions of interest in SPACECOM (that is, of an intention to participate in SPACECOM as an investor and/or user of its services). The survey revealed a large potential market for 4/6 GHz and 11/14 GHz transponders. Taking into account potential competitive strengths and weaknesses in this market, it was estimated that, in telephony and TV distribution, the competition could capture about 50 percent of this market, but that SPACECOM could gain most of the direct TV market in the absence of any effective competition in this sector over the period under review. Unanimously, the officials interviewed expressed the desire for SPACECOM to comprise regional centers that would control the satellites serving the region.

Were SPACECOM to function as a commercial company, the means of raising capital at central or regional levels would pose something of a problem. However, all save three of the African officials contacted believed that Africa's requirements could be satisfied by satellites that also serve Europe. This set-up would place the African ministries in the position of users, rather than investors, initially.

In general, the organizations contacted expressed the wish to participate in making the investment, but have all realized the value, even the necessity, of accepting the flow of external funding into the organization's own funds. Agreement was also widespread on the value of separating utilization and investment. (Certain officials expressed the wish that the control rights of external investors be limited.)

All interviewed considered that the main objective of SPACECOM should be to make the space sector available for domestic telecommunication services (including television) by leasing repeaters. However, some suggested that a secondary type of business or interest could lease ground stations and train personnel. Others even proposed that SPACECOM provide remote-sensing services.

Unavoidably, SPACECOM will find itself in competition with other organizations of the same kind, such as INTER-SPUTNIK, or with national or regional projects such as PALAPA, ARABSAT, etc.... But market relationships could be complementary rather than competitive. In addition, the survey revealed INTELSAT's own constraints, in particular the limits of its ability to provide domestic systems and the rigidity of its decision-making procedures. It can be concluded from the replies of most of the telecommunication entities interviewed that a SPACECOM-type organization should be better placed than INTELSAT to provide, economically, new domestic services required by these entities (in particular, TV distribution and rural telephony).

In light of these considerations, EUROSPACE is now examining the ways and means of establishing a SPACECOM organization. Potential sources of investment are being approached, along with European and Third World authorities who will become involved, especially the PTTs and the TV organizations.

■ *Yves Demerliac, Secretary General, EUROSPACE, Paris*

APPLICATIONS (continued)

The Hermes experiments and Anik-B pilot projects have as their goal testing the role of telecommunications in general, and satellite communications more specifically, in overcoming the constraints to social and economic development that rural Canada shares with many LDCs:

- difficulty in attracting adequate specialists and managers to remote areas
- high cost and inefficient use of special staff who are required to pay routine visits to remote areas
- difficulty field personnel in remote areas have obtaining specialists' advice or consultation
- long delays in dealing with potential emergencies
- difficulty in providing in-service training programs for remote-area personnel
- feeling of isolation by remote-area personnel
- lack of culturally or regionally relevant broadcast programs or systems
- lack of possibilities for inter-community communications among community leaders or groups with similar concerns

The Hermes Experiments

The communications facilities used in the Hermes experiments range from regular telephone links, to teleconferencing, to slowscan TV, to facsimile, to data, to radio and television broadcasting, to one-way television links, as well as to interactive television.

Hermes was launched in January of 1976 and is scheduled to be turned off in late 1979. The Hermes experimental applications program in Canada was initiated when the Department of Communications (CDC) invited any interested groups in the country to propose experimental uses. The program is conducted with 20 satellite earth stations, which are loaned to the various experimenters. Since several projects are going on at the same time, no single experimenter has access to all terminals. The Hermes Project is a Joint U.S.-Canadian venture. Time is being shared on an alternating day basis, an arrangement that poses specific constraints on the experiments conducted in both countries. The experiments conducted in Canada last, on average, three months. Experimenters have in general between three and six satellite terminals at their disposal.

Education. Six education experiments have been conducted using Hermes. To create a multipurpose educational network, the University of Quebec (a decentralized province-wide institution with 7 main campuses) conducted 12 sub-experiments involving most of its campuses. The experiments explored novel ways (including teledocumentation and teleteaching) the institution could use telecommunications to fulfill its mandate to provide education and research opportunities to all residents of Quebec.

A second experiment focused on distance education. Just prior to its participation in the Hermes project, the Distance Education Planning Group (DEPG) was created by the Ministry of Education of British Columbia to assess and plan access to educational opportunities for residents in remote areas of the province. The main objective of DEPG's project was to test the utility of a centralized distance education agency in B.C. to coordinate activities on a consortium basis. Successful, DEPG managed to enlist the active participation of over 20 educational institutions and it demonstrated modes these institutions could use to cooperate in program development, software program sharing, local tutorial support, and so forth. While no credit courses were broadcast, the programs aired included vocational training courses in forestry, a series for senior citizens on current issues, a series of public health forums, and programs for librarians on term-paper clinics and on-line computer searching. The programming format was continually revised and included workshops, seminars, phone-ins from cable viewers, films, discussions, and off-air workshops.

Another representative experiment involved the Ontario Education Communications Authority (OECA), which provides educational radio and TV broadcasting for the province. It used the satellite system to bring some of its TV programs on a trial basis to communities. This outreach activity was supported by specially designed print materials, pre-broadcast workshops, visits, and tests of audio conferencing as a means of inciting learner participation in remote sites.

Health Care Delivery. A telehealth care experiment conducted by the University of Western Ontario connected the University Hospital, a remote hospital, and a nursing station by audio. (The remote hospital also sent television images to the University Hospital.) Vital signs were transmitted by special equipment, such as electronic stethoscope, ultra sound, and electrocardiogram in this experiment, which established the feasibility of supplying specialists' advice by telecommunications to the staff of remote health-care facilities.

Memorial University demonstrated the use of slow-scan TV to transmit x-rays from remote hospitals for specialist interpretation. In another experiment, the Government of Ontario simulated a medical emergency evacuation from a remote site to a regional hospital by continuously monitoring the heartbeat of the patient while he was in transit.

Administrative Communications. The Telecommunications Service Branch of the Government of Ontario, which has the responsibility of providing all telecommunications services for the various provincial ministries, tested the satellite system in teleconferencing (audio and video) modes and for data transmission. In a multi-ministry experiment, the Ministries of Environment, Natural Resources, Transportation, and Agriculture, as well as the Solicitor General, Civil Service Commission, and Ontario Educational Communications Authority designed programs to address agency priorities in serving remote and non-urban areas. Projects included support of forest fire control, routine conferencing, medical evacuations, consultations within government on policy directives, etc. In Quebec, the small terminal was deployed in remote exploration camps to provide instant communications for a geochemical research team.

Almost all other experiments had administrative communications components, either in support of matters bearing on experiment management or the services delivered. They included course scheduling, discussions with site coordinators regarding follow-up activities, and the transmission of patient charts.

Community Interaction. A two-way video experiment between a community in French-speaking Quebec and a small francophone community in the English-speaking province of Saskatchewan allowed the citizens in these communities to exchange programs on their respective cultures, activities, and interests. The Alberta Native Communications Society (ANCS), which provides TV and radio programs for Alberta's Indian populations, spearheaded an experiment in pooling the resources of agencies and ministries responsible for Indian affairs. The project consisted of an audio phase preceding a video phase. In both, the ANCS studio prepared programs in consultation with the people and coordinators in the receiving communities. In post-program discussions via the satellite among all sites, spokesmen for or against certain programs took the studio "hot seat" to discuss and explain program implications.

Broadcasting. Of the three broadcasting experiments, only one involves television activity. This experiment, jointly sponsored by the Canadian Broadcasting Corporation (CBC) and OECA, provides network television signals to very small antennas in remote areas. Technically, this experiment demonstrates the Hermes satellite's position as a forerunner of Direct Broadcast Satellite activities.

The other two broadcast projects, both sponsored by native communications groups in Northern Ontario and Northern Quebec, demonstrated new approaches to regional radio networking. In both, local community radio stations were linked via satellite to exchange programs and news, and to strengthen regional identity.

Findings

The Hermes experiments demonstrated that a high-powered satellite system can provide a reliable and flexible communications system and that this system can be used effectively by the public service sectors to support their work in remote and dispersed areas. The experiments established, among other things, that terminals can be operated easily by non-technical people with a minimum of training, that the audio system was more trouble-ridden than the video system, that the satellite delay did not affect the communications significantly, that open microphones are preferable in most cases to push-to-talk microphones, that satellite communications systems can be "demystified" and made acceptable to most participants, that audio conferencing can be an economical and useful tool for administration and training, and that satellite systems can be shared effectively by users with different program interests.

Lessons related to program preparation and operation are also numerous. First, a coordination committee should be set up to give the main groups of participants a say in program development, and participants at remote sites should be involved very early in project development. Second, coordinators for activities at all sites should be appointed early on in the project. Third, the program preparation team should include program managers, communications engineers, evaluators, and content specialists. Fourth, program planning should be flexible, especially with respect to administrative matters.

Operating experience revealed that the interactive component of the satellite system was considered most significant by the participants and that dry-runs are required to familiarize users with interactive on-air techniques for educational programs. Experience also suggests that no single educational format always works but that for outer-active systems, "talking heads" can be acceptable since participants at remote sites can interrupt.

In general, participants at remote sites reacted favorably when presentations were made by resource people at other remote sites, not exclusively by those at the main resource center. Almost all participants preferred short, discussion-stimulating messages to a long film or tape, and the importance of having a moderator/tutor in each participating group was firmly established.

Other findings were that the satellite-delivered component should be part of a multi-media approach to teaching, that programs should stimulate discussions between participating sites (and not only between sites and resources people), that even a well-prepared telecommunications session will spur less interaction between participants than will similar face-to-face sessions, and that the number of sites or participants that can meaningfully be linked in an educational teleconferencing network is finite.

The Hermes experiments established that within Canada satellite systems can be used with success to support health-care delivery, education, and so forth. They also showed that merely recognizing this fact is not enough to facilitate the adaptation of operational systems. But at the same time, they provided information and insights of use to policy-makers and program developers inside and outside Canada.

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Satellite ITV In Alaska

In Alaska, the distance between settlements, the sparsity of the population, and geographical obstacles have all hampered development of a reliable, statewide communication network. Of late, the conclusion has been reached repeatedly that satellite communication is the only effective way to surmount these natural barriers in Alaska and to equalize the quality of communications available to urban and rural Alaskans. The state also has a long-standing commitment to equalizing educational opportunities. Over one-third of the annual state budget is devoted to education to assure that regions with small populations (and with virtually no local tax base to support education) have public schools.

Four years ago, over 100 Alaskan communities, most with schools, had no reliable telephone service. In many villages CB or HF radios were the only contact with the outside world. Even in many communities with telephones, completing a call to Seattle was easier than contacting a village 50 miles away. Yet, in rural Alaska, a phone can literally mean life or death in an emergency. So, at the state's initiation, the number of long-distance circuits was increased, and rural service began to improve. State attention then turned to the other most visible means of communication still lacking in most rural communities: television. In 1974, most Alaskans could watch commercial or public TV, broadcast or cabled through local stations, in the largest communities. Geographically, however, most of the state was not served, and "live via satellite" programming was generally limited to special sporting events that could draw local advertising dollars.

In 1974-75, the state's participation in the educational applications of the ATS-6 satellite project helped define the significance of television to Alaska's rural schools. In organizational and management terms, the ATS-6 project was accountable to the communities it served, and it offered important opportunities to train Alaskans to make Alaskan television programs for rural viewing: "The old folks smile as they hear a language they can understand," wrote one villager.

For the most part, however, the instructional TV component of ATS-6 was not part of the mainstream of Alaskan education. The ATS-6 project was not managed by an educational agency, and it was an experiment that ended, a phenomenon common in Alaska. When ATS-6 broadcasts ceased in 1975, the teachers in the scattered site villages still needed to teach elementary health and English as a second language, and they continued to do so, minus the ATS-6 video and interactive audio.

Alaska was not prepared to carry on with instructional television until its commercial phone service was improved (see page 3). In 1976, however, as satellite earth stations and medical and public phones were installed in over 100 communities, the state's attention again turned to television. Based on a presumed but unstated public demand for television, legislators approved a $2.1 million addition to the earth station network for the Satellite Television Demonstration Project, a project designed to test the technical feasibility of using small earth stations for rural TV broadcast reception. The State of Alaska paid for the transponder and met the related expenses of delivering live news, sports, and public affairs programs to the seven existing commercial TV stations and of delivering eight hours of entertainment network fare a night to 23 villages, none of which had previously had access to television or a school.

One pride of the ATS-6 project had been its Consumer Committees, representative groups of site-village residents who participated in programming and production decisions. The state sought assistance from the Alaska Federation of Natives in selecting the village TV sites and the programs to be aired. This new committee consisted of representatives from each of the 12 non-profit Native regional associations. Committee members selected all village entertainment programming from all four national networks, using the villagers' expressed preferences as a basis for making decisions. Unused transponder time was offered at no cost to other state agencies to broadcast non-commercial programs of their choice to these selected village sites.

Alaskan education was undergoing significant changes when the opportunity to participate in the state's Satellite Television Demonstration Project was first proposed. In July 1976, all previously state-operated schools in rural Alaska were turned over to local control. State funding continued, but 21 Rural Educational Attendance Areas were formed, all with locally elected school boards determining how the districts would be managed and what would be taught in the schools.

The public schools reached by the Satellite TV Demonstration Project were distributed within 13 independent school districts, most of which were the newly formed districts, in three time zones. Most of these districts faced basic problems besides those of communication. In one Ohio-sized district with 300 kids scattered in eight village schools, the crisis list resembled those of neighboring rural districts: formal notice had just been received that one village high school building had failed to meet safety codes and would need either major repair or replacement; one two-room school was in danger of freezing up for the protracted winter season because fuel hadn't been delivered; and one of the three teachers in the school just downriver had quit because the only available housing was small, cold, and uncomfortable.

What this satellite instructional television project had to offer the overworked administrators and isolated teachers was a classroom resource from which they could select relevant and needed learning lessons. Labeled a "demonstration," in many respects the project signalled the end of Alaska's experiments with communications technology. This project leased satellite time from the private sector, thus setting management and operations precedents for continuing permanent Alaskan TV delivery via satellite. It represented then an opportunity to develop realistic and cost-effective instructional TV service to benefit rural education, and the Department of Education accepted management responsibility.

Alaska has no statewide curriculum, so the Department's first task was to provide instructional TV programming accountable to the varying needs of the independent district sites. Each district was first requested to state in writing its desire to participate and its objectives. With these statements and teachers' preview recommendations in mind, project staff began broadcasting 10 hours a week in early 1977.

Evaluation efforts revealed the limitations of a one-way broadcast schedule; the importance of equipment reliability; the lack of teacher experience in working with ITV; and the need to offer more variety at more grade levels to support courses in math, science, reading, social studies, and especially in Alaska studies. On the other hand, 100 percent of the teachers responding in writing wanted the ITV programs to continue the following school year, as did the parents and the students.

Additional Department of Education funding allowed expansion of the broadcast schedule to 15, then 21, hours a week during the 1977-78 school year. College credit academic courses received some response from village adults, but the most successful adult educational series was GED BY TV. Far exceeding expectation, a total of 114 rural adults enrolled in this TV course (made in Kentucky but supplemented by three Alaskan-produced segments).

The Department of Education received its first direct, substantial funding to continue this ITV service in July of 1978, in conjunction with the $2.7 million extension of the satellite network to 11 more communities. By June 1979, this network extension will allow the potential for ITV broadcasts to reach 35 percent of students enrolled in public school in Alaska.

The management lessons learned so far in Alaska may well apply elsewhere. In fact, some of the problems encountered were readily anticipated from accounts of experiences of other developing educational telecommunications systems.

1. *Strategy*. We must deal with the decision-making process as it exists (and differs) in numerous Alaska government agencies, and the historical relationships, territories, and boundaries of each. A basic understanding of the terrain is necessary to determine who has what interest in creating an effective telecommunications system for education and where the different interest groups fit into the decision-making process. We must clearly address the unique needs of each of these groups, offer solutions at a specified cost, and stimulate full interaction among the varying user groups.

2. *Vocabulary*. Technical communications terminology can intimidate or bore or confuse users. Our task is to communicate clearly to educators not how the satellite works, but how instructional television works in the classroom. With this vocabulary, emphasis does shift. Given understandable and relevant information, the user is in charge.

A related problem is determining who has information and is willing or able to distribute it and to whom. With management placing priority on dealing promptly with user requests, the credibility of technical communications services can only improve. For example, when equipment breaks down, what frustrates villagers is not knowing what's going on, how long they should expect to wait, and if anyone out there is working on the problem. They need and deserve to be kept informed.

3. *Advocacy*. Implementing anything new may mean meeting resistance to change. For example, technology may pose particular threats to education, with visions of machinery replacing teachers, etc. Advocacy requires demonstrating the quality of service available and the skills would-be users need to feel in control in their own domain. If the service is well demonstrated and if it makes work quicker or better understood at a reasonable cost, it won't be ignored for long.

Where does the Alaskan experience lead? We're still testing our own waters in Alaska, exploring the value of and the need for a variety of broadcast alternatives for education. Part of our exploration includes adapting models and systems developed in other states or countries. We may develop our own definition for television in Alaska, or we may find that the current definitions suffice.

■ *Jennifer L. Wilke, Alaska Department of Education, Juneau, Alaska. This article is adapted, with permission, from a longer report published in* Pacific Telecommunications Conference Proceedings, *D.J. Wedemeyer and David L. Jones, eds., Institute of Electrical and Electronics Engineers, Honolulu, Hawaii, 1979.*

COMMUNICATION SATELLITES AND SATELLITE DEMONSTRATIONS IN RURAL DEVELOPMENT

It may be difficult to think of communication satellites as appropriate technology for rural telephony, especially since most satellites have been designed and used as substitutes for undersea cable or terrestrial microwave on heavy-traffic international and inter-urban routes. Even though costs per circuit for the satellite (space segment) and the size and costs of ground stations have been declining rapidly in recent years, most operating experience has been with systems that are inappropriately expensive for thin-route rural communications. Nevertheless, communications satellites have several features that make them ideal for rural thin-route applications when technical specifications appropriate to those applications are selected.

The most obvious characteristic is the communication satellite's cost-insensitivity to distance. The cost of reaching the most remote community is virtually the same as that of reaching nearby communities. Moreover, communication capability can be installed in order of priority of need, independent of location: the more distant locations with greater needs and greater transportation problems can be given service first. This complete flexibility of location may be important when coordinating communication installation with the specific needs of rural development projects.

Satellite systems are likely to be more reliable, more robust, and easier to maintain than terrestrial systems — an important consideration in rural areas, especially in mountainous, jungle, or desert terrain. The space segments of satellite systems have proven themselves highly reliable, as they must be in orbital locations. The ground segments, because they are located near the human settlements they serve, are easier to maintain and repair than are the remote repeater sites much terrestrial communication relies upon. Because any station can reach any other station in the network in a single "hop" through the satellite, reliable interconnection depends solely on the two stations involved. Unlike failures in terrestrial systems that depend on a series of sequential links, the failure in any ground station is strictly local and has no negative impact on other parts of the system.

Satellites also allow a degree of capacity-related flexibility that is impossible in terrestrial systems. Ground stations can be installed to provide as little as a single voice channel of service using single channel per carrier (SCPC) equipment. Additional capacity can be added easily in those locations where demand develops. Other services, including data transmission and radio and television reception, can also be added incrementally to the same basic ground station as needed. In contrast, a terrestrial microwave system must have enough capacity at the outset at all locations to provide for the maximum end-to-end capacity required, and a terrestrial open-wire system cannot undergo major capacity expansions at any remote location unless the entire system is altered, invariably at considerable cost. Satellite systems also permit a simplex circuit to be shared at a number of locations as a common conference circuit. This costs less than obtaining the same capacity by using duplex circuits to interconnect each pair of points. In addition, this capability is easier to provide by satellite than standard telephone service.

If thin-route (SCPC) earth stations are equipped with demand assignment multiple access (DAMA) capability, then satellite capacity does not need to be dedicated to earth stations. When needed, an unused circuit can be selected from a pool of general purpose circuits. By the use of simplex conference circuits and thin-route DAMA equipment, the space segment costs for rural communication can be made quite small relative to the ground station costs and relative to all-terrestrial alternatives.

Some characteristics of present satellites make them less than ideal for rural applications, and the small scale on which demonstration projects are conducted results in unit costs of satellites used in demonstration projects being higher than they are in a later operational system. Nevertheless, the service characteristics to the end users could be provided in a way that would be virtually indistinguishable from the proposed more economical system. Most of the technology would be the same as in a later system and could continue in use as part of such a larger operational system.

Rural telecommunications demonstration projects utilizing satellites could provide useful experience for the national telecommunications entities that provide the demonstration and for the rural social-service agencies implementing programs that use the communication capability. In addition, evaluation of the social and economic consequences in the rural areas involved could provide planning agencies and policy-makers with the evidence they need to make informed decisions on future investment in communications for rural development.

Some bilateral or multilateral development agencies concerned with problems of rural development may well be persuaded to bear much of the cost of a small number of experimental or demonstration programs. Meanwhile, pending the results of such demonstration projects, no short-run decisions that will make it economically difficult to provide low-cost rural telecommunications later should be taken now.

■ *Edwin B. Parker, Institute for Communication Research, Stanford University. This article is part of a longer, more technical one, "Communication Satellites for Rural Development," which appeared in the December 1978 issue of* Telecommunication Policy. *The original article was based on a paper presented at the International Satellite Communication Seminar, Lima, Peru, May 15-19, 1978.*

Rural Communications for Social Services in Peru

The education division of the *Instituto Geofisico del Peru (IGP)* has submitted a proposal to the Agency for International Development (AID) to study and conduct experimental field demonstrations of rural social-services delivery via communications satellites and UHF/VHF radio-telephone linkages. The Department of Special Projects in the *IGP* is now developing detailed project plans for AID to use in making a final decision on funding the project; representatives of the Peruvian Ministers of Education, Health, Agriculture and INTEL-Peru have met to discuss such plans; and a Peruvian working group coordinated by the *IGP* is elaborating upon the proposal.

The proposed project utilizes satellite and radio terrestrial technologies for rural communication. It is a pilot demonstration aimed at evaluating the effectiveness of this combination of technologies to improve social services and its implications for the socioeconomic development of rural populations. Specifically, the objective of the project is to determine the effectiveness of the hybrid satellite-terrestrial link for communications and for provision of education and health assistance to rural populations.

The proposed project entails the installation of small low-cost earth stations at two rural sites. The utilization of the INTELSAT IV-A satellite will allow these small stations to communicate with the capital city Lima or with Iquitos, Tarapoto and Pucallpa — cities with Standard-B earth stations belonging to the Peruvian Domestic Satellite (DOMSAT) system.

Three basic references were considered in planning the project: 1) regional communication needs; 2) the existing infrastructure for delivering current programs in education, health, and agriculture; and 3) the project's compatibility with the DOMSAT system.

Communication Needs

Slightly less than half of Peru's 16 million people dwell in vast rural areas where communication services are deficient or non-existent. Among rural Peruvians, the illiteracy rate is high, the shortage of teachers notorious. There are too few schools in these areas and too few physicians to provide adequate medical assistance. A new program, *Servicio Civil de Graduandos (SECIGRA-SALUD)*, provides some more medical care, but young doctors involved in this program often must operate in a communications void.

Other communication needs are for advice and instructional materials on new farming and agriculture techniques, and for telephone communication and data-transmission links between rural areas and large cities.

Existing Infrastructure

Education. Peru's education sector consists of 10 Regional Offices, 34 Zone Offices, 800 *Núcleos Educativos Comunales (NECs)*, and a great number of *Centros Educativos*. At the first three levels, administrative, development, and coordination functions are performed. The critical link between teachers and this educational structure is the *NEC*; *NEC*s are located in middle-size towns, and each has a *Centro Educativo* as an adjunct facility.

The education sector will use satellite links to provide administrative support between the Educational Zonal Offices and the network of the *Núcleos Educativos*. Similarly, it will use radio UHF/VHF circuits to complete the communication support network connecting *NEC*s to the teachers at the *Centros Educativos*.

Health. The health-care sector is organized in a similar way. It consists of 10 *Regiones de Salud*, 57 *Areas Hospitalarias* with 337 hospitals, 352 *Centros de Salud*, and 1,115 *Puestos Sanitarios*. The Ministry of Health takes responsibility for providing health care to the urban poor, and to those in rural and remote areas.

Puestos Sanitarios, located in the villages and attended by nurses or graduating physicians, will be linked to health centers and hospitals that will give personal supervision and logistic support. Paramedical personnel at remote *puestos sanitarios* will be able to consult directly with hospital doctors for assistance with diagnosis and, in difficult cases, with patient management. In-service training can be provided with lectures and discussions on preventive health care and be transmitted via the system links to the staff at remote health facilities. Voice channels can be used to transmit radio programs on family planning, child care, etc.

Agriculture. With voice communication to rural communities, the Ministry of Agriculture will attempt to improve the effectiveness of its extension programs. The use of voice communication is intended to increase the flow of information between government agents and extensionists. Such a communication channel is an efficient means of transmitting market prices to farmers and word of new agricultural techniques to remote areas.

Civil Defense. The system's satellite narrow-band channels can transmit indications of seismic activity at remote and isolated areas to data-processing centers, at which the need for disaster prevention and relief measures can be assessed. Defense-related instructions and first-aid assistance can be simultaneously transmitted via parallel satellite links.

Telephone Communications. As part of this project, conventional telephone service will be provided to rural towns, which will be connected to the national network. Equipped with similar facilities, each town in the network can call any other town.

In the villages, the *Centro Educativo* and the *Posta Medica* will have a telephone or a microphone and speaker. The operator will not notice, much less be bothered by, the technical complexity of electronic and interface equipment needed to make conversation possible.

Technical Compatibility

The proposed system is designed to be technically compatible with the Peruvian DOMSAT system, which uses a quarter transponder in the INTELSAT IV-A (F-2) on a leasing basis. Two earth stations with parabolic antennas of 6 meters and low noise amplifiers will be installed at two rural middle-size towns. The stations make possible voice communication with any of the Standard-B stations of the DOMSAT system, which have single channel per carrier (SCPC)/FM equipment for voice-activated telephone channels. The access units at rural stations are also SCPC/FM units.

Via radio UHF/VHF circuits, surrounding villages can communicate with the middle-size town in which the small earth station is installed. Electronic wiring at the stations will connect the terrestrial and space circuits, and an operator at each station will demand-assign the voice channels in the satellite. The 12 voice channels in the space segment will be attended within the DOMSAT quarter of transponder. Multiparty conference circuits, with many subscribers sharing a common frequency channel for a simplex audio, will be part of the system. The INTELSAT space segment will also have capacity available for experimentation. The use of this hybrid system will be tailored to reflect the requirements of the participant sectors.

Benefits

The proposed Peruvian project, the first in the series of studies and demonstrations that AID plans to carry out in collaboration with INTELSAT, will be of use to those undertaking similar projects in developing countries in the future. The message transmitted via the satellite-radio link will be prepared and distributed by the users — the Ministries of Education, Health, and Agriculture. These institutions will have opportunity in both participation and evaluation to improve their organization and the effectiveness of their messages. The project will generate new knowledge of program production and new evaluation methodologies.

The *IGP* in particular will gain knowledge in the use of small and low-cost earth stations and of the techno-economic implications of the technology used in the project. It will thus be in a position to help other Peruvian agencies plan satellite technology applications for rural communications and social services. (INTEL-Peru will also have the opportunity to experiment with small earth stations and to measure the incentives for providing social services as a new market in the telephone and data transmission service.)

More generally, the study proposed as part of this project will help policy-makers assess communication systems planning and make informed judgments on the future applications of satellite domestic systems for communications and social-service delivery in Peru.

■ *Dr. Angel Velásquez, Education Sector,* Instituto Geofisico del Peru

The Pitfalls of Satellite Projects

Alaska is in its third year of leasing a satellite for interstate and intrastate delivery of television. The cities and towns of Alaska get live and same-day (delayed) television from commercial networks on the east and west coasts, and a number of villages get daytime instructional television in the classroom plus a "prime time" entertainment schedule in the evening. State government has insisted that the long lines carrier use satellite to deliver telephone service to rural areas and has proved that an inexpensive, 15-foot (4.5 meter) dish is adequate for receiving TV.

At the same time that such "miracles" are an everyday reality, WATS, broadcast-quality audio circuits, and other less sophisticated telecommunications tools are not available at reasonable cost to Alaskans. State subsidies have enabled us to accomplish the most difficult tasks first, even though the less glamorous services are equally necessary and may prove more cost-efficient.

How we got to this point is a long, undocumented story. But in the last ten years, each of a number of projects, experiments, and demonstrations has contributed undefined elements of interest, knowledge, and experience. Those projects have ranged from simple two-way radio via the ATS-1 satellite to complex two-way video via ATS-6 and RCA's Satcom satellites. Along the way, a number of "pitfalls" have become apparent, two of which are *the tyranny of the technocrats* and *the fear of failure*.

The tyranny of the technocrats creates a situation in which the technology tail wags the communications dog. Imagine: you have a social problem you suspect could be eliminated by some form of communication from point A to point B, and sitting across the table is an engineer who is supposed to help you solve it. Ostensibly, the engineer has the easiest part of the job because he works with inanimate objects that he can manipulate until they perform properly. You've got the worst of it because you're concerned about human beings and what they will or won't respond to. Good at dealing with the natural laws of physics, he tends to be disdainful or incompetent when it comes to the natural laws of human behavior and communications patterns.

Start with the opinion that a satellite is nothing more than a tool. It may be complex, it may be costly, it may seem mysterious, but understanding it well enough to use it is not difficult if you find yourself a "good" engineer to explain what you want to know. How can you find such an engineer? What you're looking for is a wizard, kindly and helpful; what you're trying to avoid is tyranny. The tyrants have no interest in what you're trying to accomplish. Since they speak a specialized language (jargon is the kindest label), they can and will baffle you. The worst of these love their toys and delight in their assumed superiority since they know all about the "air waves." (Just remember, you too could have been an engineer had you chosen to.) The best engineers, however, are indispensable, capable of making steel, aluminum, and objects painted with special alloys do things that enable you to communicate over long distances with ease. They believe the point is helping people, and to them there are no technical impossibilities or dumb questions. There may be cost considerations that put certain technical capabilities out of your reach and there may be questions that are naive, but they can and should be discussed. If you are willing to be educated about technology, you can probably find a "good" engineer, or someone who can teach you as much as you need to know. The best "indispensable technician-wizard" I know says things like "I sometimes have difficulty answering a question because there are so many possible answers." After years of dealing with him, I trust his judgment because he explains how he reached his conclusion.

The "lessons" that you (and the "good" engineer) learn from every project must, above all, influence the evolution of an operating system. This point relates directly to another pitfall of satellite use, the fear of failure.

Fear of failure on the part of the entity responsible for policy decisions at the highest level makes the entity back off from the possibility that it is beginning to build an operational system. "The first day of the rest of your life," today could also be the first day of an operating system, *if* you accept the principle that experimenting, demonstrating, and operating a telecommunications system are processes that will never be totally completed.

People offering you an opportunity to "revolutionize your ability to communicate" naturally want you to participate wholeheartedly so that the project will be as successful as possible. Yet, you naturally don't want to spend precious time and energy during the finite period of the project and wind up X months later frustrated because you can't afford to buy the system you've been using at special reduced rates. Cheer up and try to demystify what's happening. Indeed, planning simply involves the repetition of a number of ordered steps:

1. identifying a set of needs;
2. proposing a system including the technology, the programming, the institutional arrangements;
3. trying out the system;
4. evaluating what worked and what didn't;
5. proposing a modification of the system based on better understanding of the needs;
6. trying out the modified system; etc.

If you repeat the cycle enough times and perform each part well, eventually you will have an operating system. And, if your public policy reflects a commitment to that system, you will remember to review periodically what you have got and to decide whether increasing its capabilities to address other problems or serve additional segments of your population is desirable.

What often happens in large projects, especially expensive ones like satellite television, is that the technology is designed before the experimenters are selected. Some compelling reasons stand behind this order of things, but if two-way video is being proposed and your real need is to experiment on a more limited scale with one-way audio or two-way audio, you are presented with dilemma.

It isn't easy to turn down a large project, especially if the lion's share of the cost is being underwritten by someone else. But if you are being asked to start with step 2 or even step 3 — "trying out the system" — at least insist on being allowed to go back to step 1. Spend some effort identifying which of your development needs might appropriately be tackled using whatever medium is being offered.

Another problem you may encounter involves choosing the number and locations of sites. In Alaska, out of fairness, both federally and state-funded projects have usually included sites all over the state. But if the society in question is multicultural, or if programming is bilingual, writers and producers are pressed to serve a variety of sites adequately. Eskimo and Indian cultures may appear to white people to be more alike than different, and perhaps they are more like each other than like suburban American culture, but labeling them both Native and assuming that the same subject will interest both equally has proved invalid. Even now, when the Alaska Public Radio Network serves eleven public radio stations statewide, listeners in different regions prefer different programs.

So, regardless of what's being proposed, try to look at the project in terms of the likelihood it will teach you something you want to know. As much as possible, insist that it be tailored to fit your clients' needs. If necessary, point out another type of project that appears to you to be more profitable. Start writing a counterproposal of your own, specifying what you need to be working with, and begin to look for those agencies that will be receptive to your needs.

Should you find yourself participating in a project that only confirms your worst fears of failure, remember that even disasters can teach us something. Don't throw out the baby with the bath water. The real tragedy occurs when you go through the motions, but don't see what's there to be learned. The temptation is to remove yourself from the whole effort to escape the taint of failure. But many projects fall short of their goals, and often the subtle lessons are ignored because of this desire to flee disaster. Instead, learn what you can in the belief that you will apply what you learn later, when you continue your efforts to establish an operating system.

■ *Theda S. Pittman, Executive Director, Alaska Public Radio Network, Anchorage*

a primer on things to come: space information stations

The future of satellite communications will involve the utilization of "space information stations," which will both greatly expand the variety and capability of space communication services and reduce the associated costs. Understanding what a space information station is and how it will be able to produce these accomplishments is thus desirable for those planning communication systems for developing nations.

Communication of Information. At present most space applications involve the gathering, processing, transmission, and dissemination of information. Existing applications range from the relay of telecommunication signals for telephony, radio, television, and data to the collection and dissemination of earth, ocean, or meteorological information observed or "sensed" from the remote vantage point of an artificial satellite in space. Space information stations will be heirs to the satellites that now perform these and similar application functions.

Geostationary Orbit. The geostationary orbit, an equatorial orbit that remains fixed or stationary relative to any point on the earth's surface, has proved ideal for communications satellites. Using it, there is no need to track the satellite from the earth's surface when aiming an antenna at the satellite in order to transmit or receive signals. In other words, since the satellite position is fixed, the ground-based antenna need only be aimed once in order to provide continued radio contact with the satellite.

Not all information-related satellites utilize the geostationary orbit. At least one communications satellite system, the Molinya System developed by the Soviet Union, utilizes an elliptical orbit around the earth. Other information-related satellites, some meterological satellites and ocean-sensing satellites among them, also utilize non-geostationary orbits. But, though various types of orbits are used for information-related satellites, most plans for space information stations require placement of such structures in geostationary orbit. With the help of remotely located sensors, such structures could gather and relay information that requires utilization of non-geostationary orbits.

Large Space Structures. "Large space structures" are facilities constructed in outer space from equipment and materials Inserted into orbit. Conventional space satellites, which are much smaller pieces of equipment than large space structures, are launched into space as one completed unit; although some may have deployable antennas, solar panels, and other equipment that must be extended, they do not require actual construction in space.

The realization that space information stations of the future will be "large space structures" has led many to use these two terms as synonymous and interchangeable. Strictly speaking, though, they are not synonymous because the term "large space structure" refers to the size of the facility and the mode of construction, whereas the term "space information station" denotes purpose.

Geostationary Platform. Plans and designs for space information stations take a variety of forms, one of the most promising and illustrative of which is that for a geostationary platform. Designed at the National Aeronautics and Space Administration's (NASA's) George C. Marshall Space Flight Center, the geostationary platform would be approximately 82 meters by 31 meters and would weigh around 18,000 pounds. Main features include power modules with solar arrays at either end of the station; attitude control equipment; an assortment of "payloads" or modules (such as smaller antennas operating at various frequencies and providing various types of information services); and electronic switching equipment required to interconnect antennas to each other and to other platform support equipment. The most prominent feature of the platform design is a large 30-meter antenna: no object now in space has an antenna this big. The 30-meter parabolic antenna would operate at the "C-Band," which is the frequency band that most commercial communication satellites utilize today. Its antenna would provide 40 "spot beams" that would provide coverage to the major metropolitan areas of the region beneath the platform's location in geostationary orbit.

As envisioned, the geostationary platform contains one electronic module for each mission. (Except for design and size, the module would not differ greatly from electronic packages of equipment serving today's single-mission satellites.) A typical module for a communications mission would consist of transponders connected to antenna systems servicing the mission. The transponders would operate at the appropriate frequencies and bandwidths and would be composed of such elements as low noise receivers, frequency-conversion equipment, intermediate and high-power output amplifiers, filters, and multiplexes. In addition, because the platform can accommodate heavy and bulky equipment, modules could also include complex processors to perform signal processing and interconnect or "cross-strap" communication links from different missions.

Advantages to Developing Nations

Space information stations make the most of limited spectrum resources. can be produced to take advantage of economies of scale, and offer capabilities that existing satellite systems don't possess.

Conservation of Resources. Since satellites that operate in the same radio frequency band must be far enough apart to allow a ground-based antenna to be aimed at one without interfering with the others, the number of satellites that can be placed in geostationary orbit is finite. However, the capacity of the available frequency resources can be expanded if antennas larger than those on today's satellites are used. For example, using multiple spot beams, which illuminate limited geographical areas, or "footprints," on earth makes it possible to reuse the same frequency spectrum (as long as the footprints don't overlap). If the platform is available the potential for expanding traffic capacity is great because, as a NASA official says, "the size of spot beam footprint is inversely proportional to the size of the spacecraft antenna."

The combination of increased communication capacity and spectrum conservation holds special promise for developing nations since it helps assure future availability of space communications that proliferating single-purpose satellites might otherwise use up.

Economies. Other, technological advantages of space information stations could reduce service rates and equipment costs for users. Economies of scale associated with the use of large space structures, say representatives of Comsat Laboratories, fall into three categories: "launching, those involved with placing one large spacecraft in orbit rather than several small ones; spacecraft, those involved in constructing and operating a single, large platform with many missions rather than many separate satellites; and interconnections, those involved in interconnections on the spacecraft and among space information stations."

The size and complexity of ground-terminal equipment could also be reduced if space information stations become the mainstay of celestial communication. Significant reductions have already taken place since 1965, and the trend toward using small earth terminals holds potential for greater equipment-cost cuts. One estimate is that a small terminal may soon cost no more than a color television receiver.

Bringing down the costs of equipment and services will help developing nations stretch the limited capital they can invest in communications systems.

Advance Services Possibilities. The variety of communication and other services offered via space information systems can increase dramatically with the advent of space information stations. Technologically possible services include fixed communications satellite service; mobile satellite communications service; broadcasting satellite service; space research, meteorology and earth observation satellite services; navigation, surveillance, data collection, and other public services. All can help developing nations improve education, health-care delivery, and other vital services.

■ *Delbert D. Smith, Editor,* Satellite Communications, *Madison, Wisconsin*

A Communicator's Checklist

1 Too often development communication planners measure the success of mass communication programs by the number of radio programs, posters, and pamphlets produced. They invest relatively little effort in determining how the messages contained in those materials are received and internalized by the intended audience. Similarly, communication researchers have frequently focused on summary evaluation, reporting on the ultimate success or failure of a campaign, rather than systematically conducting formative evaluation that might lead to more successful communication.

Communication Pretesting is a tool for reversing these unhealthy trends. This University of Chicago monograph is a comprehensive and practical guide on how to design, analyze, and use message pre-testing procedures to improve the quality of a variety of communication products. In it, radio spots, posters, pamphlets, television spots, and movies each receive separate treatment. Practical research techniques that allow even novice communication planners to conduct useful and inexpensive pretesting programs are described.

Meant for practitioners, this monograph focuses on the "how-to" of the message-design process. Information on what to measure, how large a sample to use, what questions to ask, how long a pre-test should last, and how to judge what the pre-test means is provided for each of the five media types. Sample posters, radio spots, and pamphlet covers are included, and advice is related to examples. Applicable to both industrial and non-industrial societies, the information contained here constitutes an invaluable resource to mass media practitioners around the world.

Communication Pretesting by Jane T. Bertrand is available for U.S. $3.50 from the Publications Secretary, Community and Family Study Center, University of Chicago, 1411 E. 60th Street, Chicago, Illinois 60637, USA.

■ *William Smith, Academy for Educational Development*

2 Budd Hall's monograph, *MTU NI AFYA: Tanzania's Health Campaign,* is based on the proceedings of the Mtu ni Afya (Man is Health) radio study-group campaign and on its evaluation. Hall participated in both and is not, therefore, merely an objective observer of the preparation, the conduct, or the evaluation of the program. Hall's personal involvement brings to the work an insider's touch, but at the same time it stops him from analyzing the campaign as critically as he might have. Indeed, most of the shortcomings of the monograph betray his involvement.

Hall commends efforts to involve in *Mtu Ni Afya* the Party, government entities, and even voluntary services from non-Party or non-government entities. Well he might. The problem, though, is the failure to see this "community participation" within the context of Tanzanian society and its ideology of development. In short, the polity of Tanzania is particularly and perhaps even uniquely conducive to community participation. It would have been more appropriate to provide a lengthy introduction on Tanzanian society, its stage of social transformation, its principles as outlined in the Party guidelines, and its aspirations vis à vis the provision of social services. (Somewhat ironically, Hall's own *Adult Education and the Development of Socialism in Tanzania* fills this gap.)

To be fair to Hall, it must be said that his review of other countries' practices in radio programming is intended to serve as background. But are India, Ghana, Cuba, and China alike enough to make the comparison of their experiences with radio campaigns valid?

A main purpose of monographs such as Hall's is to provide models that are transferable to other countries for similar purposes. But the adopter needs, among other things, information on costs and operational procedure. The latter is treated well indeed: presentations and operations are described in detail. What is lacking is an attempt to identify total costs. A record of government and international agencies' expenditures, not to mention estimated costs of the time of campaign organizers (and perhaps of the time of the participants) and other costs not mentioned (such as those of materials) would have helped readers get their bearings. Translating benefits into monetary terms is difficult, but the picture would be clearer if the discussion of the benefits derived from the program went beyond participation, target population, and changes in health practices to include discussion of the relationship of these factors to increased productivity. Similarly, a section on unintended outcomes — on the mistakes and practices to avoid in future — would also have been appreciated.

Despite the drawbacks outlined, Hall deserves credit for his detailed presentation of what went into program preparation and how the program was conducted. His descriptive analysis and attempts to measure the program's effects help readers gauge the transferability of the campaign inside or outside Tanzania.

Mtu Ni Afya: Tanzania's Health Campaign is available free from CDC.

■ *T.L. Maliyamkono, Senior Lecturer in Economics of Education, University of Dar es Salaam*

3 *The Role of Broadcasting in Rural Communication* resembles the notes of a serious graduate student. Its plentiful ideas beg for development and order, and the shorthand in which it is written may mean more to Josef Eschenbach than to you or me. The effort is as devoid of pretense as the task is full of purpose, but Eschenbach's confusion is our loss.

The author *has* done his homework. Early perspective-giving chapters on recent communication history bespeak an intimacy both with the classic literature of socioeconomic development and with the masterworks of communication theory. But so much is crammed on a thumbnail that the formal effect is often that of "all thumbs." On page 14 alone, Eschenbach fixes Liebnitz's "monads" as the precursor of the "bit" in information theory without making the (metaphorical?) connection clear, sets up a peculiar dichotomy between cybernetic and hermeneutic communication in which the concept of feedback is made foreign to the first, and strings together so many abstractions that the mental environment dissolves in thin air (monads notwithstanding).

Sense may have been crucified by Eschenbach's translator: German-to-English translation is said to be fraught with problems of predication. More likely, though, Eschenbach simply pays a disciple's undue respect to the unscientific and incommunicative prose that too often finds favor among communication scientists.

At any rate, the simpler stuff — the case studies and how-to-do-it sections — reads better. It supports Eschenbach's contention that massive problems and mass audiences require nothing less than the deployment of mass media.

Precisely because organizing audiences by the klatch takes more time and other resources than the author thinks good sense warrants, fresh and better ways of using "big media" must be found. In the name of this cause, Eschenbach reviews radio-based communication projects in Zambia, Colombia, Ghana, and Indonesia, and he uses Everett Rogers' ladder model to perform a step-by-step analysis of an agricultural communication project.

Eschenbach's simple but important message deserves another treatment, one in which less is asked and more is given. This volume should not be discounted, but should be taken for the first try it is.

The Role of Broadcasting in Rural Communication can be obtained from the Friedrich-Ebert-Stuftung, Koelner Strasse 149, 5300 Bonn-Bad Godesberg, Federal Republic of Germany. ■ *K.C.*

Development Communication Report, published quarterly by the Clearinghouse on Development Communication, is distributed free to over 7,000 development professionals.

A center for materials and information on important applications of communication technology to development problems, the Clearinghouse is operated by the Academy for Educational Development, a nonprofit planning organization, and supported by the Development Support Bureau of the U.S. Agency for International Development as part of its program in educational technology and development communication.

Readers are invited to submit typed manuscripts of no more than 1000 words and to send in photographs.

Film In Development Education

Film has been used throughout the developing world in combination with various media and in conjunction with efforts to solve basic economic and social problems. It has been used with mixed results both to transmit information and to motivate viewers to accept or adopt new practices. Occasionally the sole purveyor of messages but far more often one of a cluster of media employed to further development objectives, film has figured in attempts to boost agricultural productivity, to chip away resistance to family planning, to promote literacy, to train teachers, to dispense practical advice on nutrition and other health practices, and to promote the well-being of the target audience in a host of other ways.

Whatever the educational aim of development films, certain general considerations regarding their production, message, distribution, and testing appear to be universally relevant.

Production Concerns. A review of film use in countries of the developing world shows that there is real concern that production of any and all films be local. The long-time presence of foreign filmmakers, particularly in Africa, is perceived as detrimental to both the development of capable technicians and the positive cultural self-perception of individual societies. Consequently, resistance to western production priorities and values is strong.

Film production, however, is expensive, and the level of technical expertise needed to produce film is relatively sophisticated. A less developed country, therefore, must make substantial investments in equipment and training to produce films adequate to its project-support needs, and it may require outside technical help. Indeed, the success with which the planner's production decisions are implemented often depends on technicians — the laboratory or maintenance workers, not directors or cameramen (since the developing world has many skilled practitioners). A way out of this bind is for a number of government ministries to share production costs.

Considerable diversity of opinion characterizes the debate over whether a film for development should be made in black and white or the more costly color. Jean Rouch, French cinematographer of the African scene, maintains that black and white images may be perceived as abstractions. A compromise opinion holds that when a development film deals, for example, with an agricultural subject, the variation of color between a healthy and a diseased plant is crucial to understanding, but that a film on, say, cattle-dipping does not require color treatment.

Andreas Fuglesang, among others, has studied the kinds of visual imagery best suited to message dissemination. He found that animation is less effective than "real" images and that distracting activities in the background or additional visual images are best eliminated either by filming with a neutral or with an out-of-focus background.

"Sound" options for development films when produced for a newly or barely literate (film) audience are also numerous. Should the film be silent with no commentary or should it be silent with commentary provided on the spot by the extension worker or van projectionist who presumably understands the local needs? Should there be an "international" sound track of only sounds and music, again with comments provided with the projection? Should there be a voice-over narrator who explains in the local language what is being shown or should the film be shot in dialogue in which the action is explained by the "actors"? The most positive response, most observers concur, has been to those films that use dialogue in the local language.

Message Planning. Of concern to producers of educational films is whether their message will be received by the rural audience that is not versed in the "language" of film. In general, audiences quickly adapt to the medium, increasing their powers of observation and comprehension as their experience grows.

Without exception, film experts state that any film made for educational purposes must be carefully planned to make sure it is suited to its audience and that it addresses local needs and sensitivities. The message must be highly specific and the more local the cultural context, the more successful the communication.

Extension workers have observed that viewers will pay close attention to a film's message when they are experiencing the problem depicted in the film. A community experiencing an outbreak of diarrhea will, in other words, heed suggestions to boil water if the film establishes a connection between unboiled water and diarrhea.

The cost of producing one film for each problem, however, may be prohibitive and may tempt producers to make films that have broader messages but that have only marginal impact on audiences. Another common failing is putting too much information into a single film. The result, "information indigestion," limits the effectiveness of the information transmitted, and makes extensive follow-up instruction by an extension worker necessary.

A solution worked out in one instance was to produce films that contained a series of "single concept filmlets." By combining very short demonstration filmlets (how to) testimony filmlets (personal reinforcements), interview filmlets (why and how), and educational entertainment filmlets (a song or short play) all on the same subject, the producers made 15-to-20 minute films that provide strong support for specific recommended practices. The filmlets can be recombined to suit various audiences and situations.

Distribution. Distribution in countries where transportation systems are unreliable is as important an element as production. In the developing world the usual means for reaching rural communities with film is the mobile van. Both commercial and government film vans ply remote rural regions of Africa, Asia, and Latin America. Following a pre-arranged itinerary, a two-person van carries film, a screen, a projector, and a generator from community to community. Major problems with the use of vans, however, are maintenance and repair. The high initial costs of equipping a van, as well as the difficulties and expense of maintenance, mean that only a carefully trained support staff can keep the vans from falling idle or being used for general transportation purposes. In all, the efficient use of mobile vans requires a network of passable roads; maintenance and repair facilities; an extension service to plan, coordinate, and follow up showings; the firm resolve to adhere closely to the van's schedule in order to maintain trust and interest; and announcements over both radio and its own public address system of a van's film presentation. Additionally, when a film is shown, field workers, extensionists, or educators should be on hand to introduce it and to conduct discussions after the viewing. If more than one film is shown, the topic of each should reinforce the other.

In urban areas, educational films can be shown by special arrangement in commercial movie houses as short features or at social-service centers and schools. Typically, for example, films on breastfeeding are run at health clinics.

Testing. Once the film's message has been determined, the message must be pre-tested to ascertain its effectiveness. Post-tests of an Indian campaign in which agricultural messages were conveyed by a variety of communications media showed that some of the problems that impeded farmers' comprehension might have been avoided. Through planning and pre-testing, message designers could have assessed local knowledge levels and could have discovered which graphics did not communicate, and which messages were too complex to be absorbed.

Pre-testing films presents special problems since the message unit cannot be adequately tested until a film is complete and the costs of changing a completed film are prohibitive. From the 1974 Uppsala workshop on filmmaking in developing countries comes the suggestion that an inexpensive Super-8 film on the desired theme might be used for the trial runs of message testing (as might reusable videotape or inexpensive filmstrips).

The main question, of course, for filmmakers and governments alike is whether the filmed message is coming across. Film researchers have yet to come up with the ideal way to use film as a communication medium, but they continue to try and they now have some direction. In filmmaker David Giltrow's words, "We'd best be sure to ask someone if we're doing things right — and the best way is through pre-testing with the target audience, evaluation, and research."

A bibliography on film and development education is available from the author.

■ *Judy Brace, CDC*

VIDEO — AN APPROPRIATE TECHNOLOGY?

Issue 25 of Development Communication Report *contained a series of articles on the potential and applications of video in development projects. Here, video's most level-headed lobbyist, Peter Lewis, pitches his thoughts into the fray.*

What are the conditions under which video is an appropriate technology in development? This question (among others) has occupied the small team engaged in the UNESCO-funded inquiry "Appropriate Technology in Communication" (reported in *DCR* No. 24). The evidence culled from the correspondence and published material that has come to ATC seems at first sight contradictory. But discussion at a recent seminar on participatory communication held in Quito by CIESPAL and that conducted in the pages of *Educational Broadcasting International* over the last year can serve to set the tone, if not the limits, of the ongoing debate.

Caroline Heller's criticism of video is based on developed-country experience and in particular relies on two studies of French experience (Council of Europe: "New Media on Social-Cultural Development" and "Video: a New Information System?"). Video practitioners in Britain have challenged her conclusions, but both in England (where a massive expansion of local radio is planned) and in North America, media groups have shifted their attention from video to radio in the last five years. Radio is seen as cheaper and as more accessible and easier for nonprofessionals to master than video. This shift of interest in Western countries may not relate directly to video's future in the Third World. But the "Fogo Process" developed in Newfoundland under the Canadian National Film Board's Challenge for Change program definitely influenced Third World video use, and *in the future* the nonprofessional use of local radio and audiocassette technology may prove similarly influential.

CEPAC, FAO's project in Peru (as reported by Colin Fraser in *DCR* No. 23), seems to be one of video's successes in the Third World. In contrast, video use was discontinued or rejected in Tanzania and Botswana. Whatever the public or underlying reasons for the discontinuation of "Tanzania Year 16," the project does not compare with mass radio campaigns developed later with such success.

Ross Kidd's arguments for rejection of video in Botswana also deserve consideration. Video was adopted by the University of Botswana's Department of Extra Mural Studies in 1974 but was replaced by participatory theater after two years as an instrument of mass rural education. According to Kidd, his equipment was vulnerable to "bumps, dust, and other conditions difficult to avoid in rural areas." Preoccupation with video, says Kidd, inhibited the use of simpler media such as slides or audio-cassettes or drama. In participatory theater, anyone can join in, play a role, improvise dialogue, handle puppets. The genre is familiar, though careful preparation is needed in workshops for the trainers and group leaders. Comparing *Laedza Batanani* with the Freirean use of slides to assist in "codification," Kidd notes that drama, which can be produced locally, is a more effective medium than slides (which in Brazil in Freire's project had to be produced in the city). That the nearest servicing for the video equipment used in the rural Botswana project was Johannesburg, 300 miles away, may have influenced the decision to discontinue use of video. At the same time, exploiting dance, drama, and other local cultural forms makes obvious sense.

In Peru, CEPAC has not found the same technical difficulties with video. Maintenance, repair, and modification services are available in Lima as part of the project. Equipment has withstood many hours of use and transportation over rough territory. For CEPAC, video provides the means of reaching a *campesino* clientele, 80 percent of whom are illiterate. The course contents are pre-tested in the field and owe much to the participation of the 40,000 *campesinos* reached annually by the scheme.

The difference between what happened in Peru and what happened in Botswana needs to be put into perspective. Naturally, the differing geographical and cultural conditions account for much. But testing each case against some of the conclusions of the CIESPAL seminar, at which Manual Celvelo of CEPAC (who contributed to *DCR* No. 25) made an influential contribution, suggests that the two responses have more in common than appears at first blush. "A participatory communication project ought to be a response to the expressed requirements or underlying needs of participants. . . . If the project is initiated with outside help, this should assist in 'take-off' but should not generate dependency of any sort (economic, ideological, technological, cultural, etc.). The project should be integrated with and not damage the cultural values of the community. It is necessary to respect and make use of the traditional techniques of communication that can best respond to the cultural characteristics of diverse groups. Whatever equipment is chosen ought to be easy to handle and maintain, with the purpose of limiting the dependency of the participants on specialists and making training easy."

These conclusions, reached by Latin American theorists and practitioners, show as much respect as Ross Kidd does for local cultural values on the one hand and, on the other, the danger of technological dependency.

■ *Peter Lewis, Appropriate Technology in Communications, London*

On File at ERIC

Reports recently entered in the Educational Resources Information Center (ERIC) files focus on library networks and education in Africa.

- *Meeting of Experts on Planning Documentation and Library Networks in Africa (NATIS).* Paris: UNESCO, 1976, 11p. (ED 156-220).

  A meeting was held in Brazzaville, People's Republic of Congo, from 5-10 July 1976, to examine recent efforts made by African Member States to plan and develop their national information systems, and to make recommendations for the creation of networks of documentation and library services adapted to the needs of African users. This document summarizes the meeting under the following headings: Introduction, Participants, Opening of the Session, Election of the Bureau, Agenda, Summary of the Discussions, and Summary of the Recommendations. An appendix includes lists of participants and cooperating organizations. Available from EDRS in microfiche for $.83.
- Dean, John. *A Regional Library Science Program for Eastern Africa. A Report.* New York: Ford Foundation, 1974, 68p. (ED 156 114).

  The Standing Conference of African University Librarians commissioned a study to investigate the feasibility of establishing a regional library science program for its 12 English-speaking member countries. Areas to be explored included regional manpower needs, the willingness of each country's employing authorities to send students to such a school and hire the graduates; the best location for the program; curriculum structure and research; staffing policy; and timing and implementation of proposals. An assessment of each country's economic, technological, educational, and library environment and ability to host a regional program revealed that about 670 professional posts would be available between 1975 and 1980, and that demand for professional personnel was high, especially at the managerial and specialist levels. The recommended location was the University of Nairobi in Kenya. The university's basic functions would be to supply qualified personnel in response to demand, act as a center for creative thinking and problem solving, disseminate ideas of local relevance, and exercise professional leadership. Available from EDRS in microfiche for $.83 or in photocopy for $3.50.

Documents available from EDRS can be ordered from ERIC Document Reproduction Service, P.O. Box 190, Arlington, VA 22210, USA. Order by ED number and enclose payment for the price listed plus postage.

■ *Barbara B. Minor, Publications Coordinator, ERIC Clearinghouse on Information Resources*

PROJECTS IN BRIEF

These project descriptions were written by Barbara O'Grady of the Academy for Educational Development using information submitted by readers in response to the Project Information Request in Issue 18 of DCR. *Future newsletters will contain four project descriptions an issue until the series is completed.*

THE ECOLOGY OF MALNUTRITION IN SANDY BAY, NICARAGUA

Mary Ruth Horner
Department of Nutritional Sciences
1300 Linden Drive
University of Wisconsin
Madison, Wisconsin 53706

Date submitted to CDC: December 12, 1978

FOCUS: The purpose of this nutrition-education project for women in 10 rural Miskito Indian villages of northeastern Nicaragua was to eliminate poor child-care practices, especially those associated with diarrhea, intestinal parasites, and bottle feeding; to teach the importance of a balanced diet for children; and to identify problems associated with family gardens. Lesson topics and formats were varied and included taped cassette messages, discussions of the messages and of photos and water-color drawings used as illustrations of major points, and demonstrations by local village leaders and the participants themselves.

SUBJECT AREAS: Agriculture, Health, Nutrition

TYPE OF MEDIA: Cassette recorder, photographs, water color drawings

TARGET AUDIENCE: Illiterate rural women

SCALE OF PROJECT: 10 villages

PROJECT STATUS: Begun in 1976; project report in publication stage as of 12/78

SPONSORING/COOP. AGENCY: Midwest Universities Consortium for International Activities; Department of Nutritional Sciences (University of Wisconsin-Madison); Nicaragua Health & Nutrition Program (Puerto Cabezas); Ministry of Health (Nicaragua)

PROYECTO DESARROLLO DE QUICHÉ

Mark D. Walker
Proyecto Desarrollo Rural — CEMEC
19 Calle, 13-33 Zona 10
Ciudad Guatemala, Guatemala

Date submitted to CDC: February 25, 1978

FOCUS: CEMEC is a Guatemalan development agency that focuses on improving living conditions in the highlands of Guatemala. At a small experimental farm, it sponsors projects intended to increase agricultural production and income. It also runs a health-nutrition center in San Andres, Sajcabaja, and an audiovisual educational program aimed at improving the self-image and initiative of the local population through the expressive arts (e.g., dance).

SUBJECT AREAS: Agriculture, Health, Nutrition, Community Development, Education

TYPE OF MEDIA: Cassette recorder, videotape, 16 mm film, filmstrips, slides, photographs, books, pamphlets

TARGET AUDIENCE: Illiterate rural adults and youth

SCALE OF PROJECT: Regional — 12 villages

PROJECT STATUS: In implementation stage as of 2/78

SPONSORING/COOP. AGENCY: World Vision; Norwegian Church Relief; Church World Services; AID; Ministries of Education, Health, and Agriculture; CIDA; Heifer Project

NATURAL FAMILY PLANNING

British Life Assurance Trust Centre For
Health and Medical Education
BMA House
Tavistock Square
London WC1H 9JP ENGLAND

Date submitted to CDC: October 18, 1977

FOCUS: A simple, basic, teaching and learning package has been developed for training teachers and for teaching methods of natural family planning. The training package will be tested in six locations and three languages in both rural and urban developed and developing countries. The audience ranges from university graduates to illiterates. The major problem has been to develop a package flexible enough to deal with these locations and audiences.

SUBJECT AREAS: Family Planning

TYPE OF MEDIA: Flipcharts with transparent overlays

TARGET AUDIENCE: Literate and illiterate adults and youth, both rural and urban

SCALE OF PROJECT: Begun in 1976; in evaluation stage as of 10/77

SPONSORING/COOP. AGENCY: World Health Organization; B.L.A.T. Centre for Health and Medical Education (London)

RADIO EDUCATION TEACHER TRAINING PROJECT

Burton C. Newbry
HRD
USAID/Nepal
Kathmandu, Nepal

Date submitted to CDC: January 3, 1979

FOCUS: This nationwide program focuses on training rural primary teachers in Nepal through radio and printed support materials. The project is now in the developmental phase, during which time materials are being developed and tested, personnel trained, support mechanisms perfected, and equipment installed. The second phase will involve broadcasting to a test group of 100 teachers; the third, expanding the program to 1,000 teachers nationwide.

SUBJECT AREAS: Education

TYPE OF MEDIA: Radio

TARGET AUDIENCE: Literate rural adults and youth

SCALE OF PROJECT: National

PROJECT STATUS: Begun in 1977; in implementation stage as of 1/79

SPONSORING/COOP. AGENCY: AID; British Council; UNICEF

(See DCR *issue 24 for details.)*

Dilemmas (continued)

therefore loathe to assume new responsibilities without additional remuneration. This card house of abuses was toppled shortly before the onset of the project when this consulting system was outlawed. But those affected by the new law didn't think that the salary raises it stipulated compensated them for the loss of income from consulting; they spent office hours ferreting out loopholes and looked with disapproval upon the new project and the responsibilities it entailed. The only true interest exhibited was in conjunction with unabashed hunger for the money being pumped into the project by a foreign donor. Naturally, mercenary values compounded the ever-present problems of petty jealousy, internecine squabbling, power grabbing. That Foreman got anything accomplished, and he did, stands as a tribute to his forcefulness and popularity.

The deadlock just described was made worse by the diehard ideal of the bold autocrat. The notion of "participatory management" was new to Country X, and while it received some lip service, the old ethos lingered on. In general, the lower echelons had little say in policy-making, concern for employees' performance and personnel was nominal, and the drive toward mere perpetuation of the bureaucracy had become all-consuming. Only unusual complaint or rare rebellion brought any change, and the civil service was maintained by placation rather than by leadership or development. Foreman thus had little incentive to relinquish his role as authority figure. No one stopped him. No one thought his style shocking.

The Stroke. The collapse came when Foreman unexpectedly resigned from office following public exposure of official improprieties. He left a power vacuum, and his replacement unwisely accorded full responsibility to Secretary without according him full power. Paralysis ensued, deadlines expired, and Moneybags cut off further funds.

The Verdict and the Lessons. Like many development projects, this one died of poor planning and congenital organizational deficiencies. But much can be learned from this unfortunate death. First, donors should not give the impression that hosts are doing them a favor by permitting a project. Second, donors should not be impatient; waiting for hosts to do their homework may ultimately entail fewer problems than trying to do it for them. Third, agents and counterparts should be chosen with utmost care. Fourth, new organizations set up to carry out long-standing activities must be made compatible with existing organizations. Fifth, the support of subordinates must be cultivated with the same energy that the backing of superiors is, and the fate of a project should not be placed in the hands of any single individual.

Obvious and trivial lessons? If so, why haven't the major funding agencies and contractors learned them yet? ■

CALL FOR COPY

DCR's editor invites readers to submit manuscripts on health-education projects that use the media, the use of computer technology in communication and education in developing countries, innovative literacy efforts, and message design. Readers are also welcome to send in announcements, opposing opinions, photographs, and "recipes" for simple educational technologies.

COMMUNICATORS' Q & A

In the offing at the Clearinghouse is the production of a pocket-sized encyclopedia of prescriptions and advice. CDC plans to collect requests for information and to invite specialists to provide one- or two-page responses. To be presented in question-and-answer form, the information will cover technology choices, common organizational problems, testing and pre-testing, and other subjects specified by *DCR* readers.

Send questions or word of your willingness to reply to others' questions to *DCR*'s editor.

A MASTER OF INTERACTIVE TELECOMMUNICATIONS?

The School of the Arts at New York University will offer a program leading to a Master of Professional Studies degree in Interactive Telecommunications beginning fall 1979. Developed over the last three years with Rockefeller Foundation support, this two-year program will be the first program given at an American university in interactive telecommunications.

Dr. Martin Elton, former director of the Communication Studies Group at University College London, will head the new program. The faculty will consist of scholars, practitioners, and researchers joined by a select group of adjunct personnel from business and government. The curriculum will include courses in the characteristics of interactive media, social organization, communication behavior, the telecommunication industry, and management.

More information may be obtained from Dr. Martin C. J. Elton, Interactive Telecommunications Program, School of the Arts, New York University, 144 Bleecker Street, New York, New York 10012. U.S.A.

Dilemmas in Country X: Candid discussions about failures

This Aesopian tale of compounded errors was contributed anonymously by a closet fabulist whose wit upholds reason. It is a close, if caustic, examination of a communication project that died of diseases that were probably curable.

(The editor invites readers to submit reports for this column. Author's name — as well as those of the people, agencies, and countries involved in the projects — will be withheld upon request.)

The Death. Moneybags (an international fund-raising and disbursing body) and Contractor (an international consulting firm) on the one side, and Foreman (the civil-service head of a government submistry X), on the other, agreed to undertake a rural communication project together. Foreman was to have chief responsibility, and Contractor would provide advice through an agent. Program, budget, and timetable were set. Action began. Foreman boldly and unilaterally accelerated the timetable. His gamble paid off. Despite strains and grumbles, his staff pulled through, results were encouraging, and preparations were made for the second stage. But the second stage never materialized. Disappointed, Moneybags withdrew, and all Foreman's men and Contractor's advice could not put the project together again — a failure explained in this post mortem.

The Wooing and Conception. Moneybags and a Contractor had identified a government with the kind of education policy they were seeking — even though programs and projects were few. They therefore proposed a project, which the government found to its liking.

Several factors color what happened next. First, Moneybags' local agent, M-001, was eager to get at least one project accepted before his scheduled departure from his post. Second, this project was by far the largest yet put in the Contractor's hands by Moneybags, and Contractor's agent, C-001, was on the verge of retirement and was determined to go out with a flourish. Third, Country X's government did not have expertise or infrastructure on a par with its enthusiasm.

For 15 months, during which in-country personnel were sent abroad for training, project negotiations proceeded fitfully. They dragged on because Foreman's staff members carried out procedures only when C-001 was in town to accompany them to the authorities. Moreover, friction developed because project workers felt that they deserved foreign fellowships as reward for participating in the project, and failure to conduct important business in Country X's language further slowed progress. Underlying many related difficulties was one fact: the foreign agencies seemed to attach more importance to the project than their hosts did.

Defective Planning and Implementation. Many of the pitfalls of project implementation reflected poor planning and budgeting. The clincher, though, was the devolution of some of Foreman's power to a Secretary, Foreman's "right-hand" man, who was an aspiring politician; capable enough, the appointee used the position not to oversee a project, but to launch a career. His heart was not in the project, and he had little power over his subordinates, most of whom were part-time employees. The upshot was that no one associated with the project could or would make a move without Foreman's help. No ministerial, much less inter-ministerial, project structure was ever established.

The Climate and Style of Bureaucracy. Miraculously enough, the first stage of the project was launched with encouraging success. Accelerating the schedule had freed up time for making extra preparations for stage two. But the combination of high taxes and low salaries had given rise to a system in which government employees earned much of their income by acting as paid, ad hoc consultants (sometimes even to their own ministries during working hours!), and civil servants wer

(Continued on page 15)

at issue . . .

Development Communication Report

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July 1979
No. 27

"Primary health care is essential health care based on practical, scientifically sound and socially acceptable methods and technology made universally accessible to individuals and families in the community through their full participation and at a cost that the community and country can afford to maintain at every stage of their development in the spirit of self-reliance and self-determination. It forms an integral part both of the country's health system, of which it is the central function and main focus, and of the overall social and economic development of the community. It is the first level of contact of individuals, the family and community with the national health system bringing health care as close as possible to where people live and work, and constitutes the first element of a continuing health care process."
—*from the* Declaration of Alma-Ata

PRIMARY HEALTH CARE

A 1975 recommendation by the UNICEF-World Health Organization (WHO) Joint Committee on Health Policy was the first major official recognition of the primary health care concept, which has been steadily gaining momentum in recent years. Primary health care was elevated to an even higher level of importance at the International Conference on Primary Health Care, held in Alma-Ata, USSR, in September 1978, jointly sponsored by WHO and UNICEF. There, delegates from 140 nations and a variety of Non-Governmental Organizations unanimously approved the Declaration of Alma-Ata, *calling for urgent and effective international and national action to develop and implement primary health care throughout the world, particularly in developing countries, aiming toward "an acceptable level of health for all the people of the world by the year 2000."*

Community, Communication, and the Health Practitioner

by Cecile De Sweemer

Like other development efforts, primary health care in developing countries depends heavily on communication, a dependence that is intensified both by primary health care's special mandate and by the importance of health to other development efforts. Primary health care seeks to deliver promotive, preventive, and curative care for the most common diseases through the most cost-effective means. It aims directly at the reduction of morbidity and mortality, and, where the appropriate motivation exists, can be used to make related services such as family planning widely available. It thus contributes significantly to that aspect of development termed the "quality of life" and can have a strong impact on people's perception of their achievements in development.

Maurice King, in *Medical Care in Developing Countries* (Nairobi: Oxford University Press, 1966) suggests a number of principles on which primary health care should be based. These statements are as valid today as when they were formulated:

- Patients should be treated as close to their homes as possible in the smallest, cheapest, most humbly staffed, and most simply equipped unit that is capable of looking after them adequately. . . .
- Some form of medical care should be supplied to all people all the time.
- In respect of most of the common conditions there is little relationship between the cost and size of a medical unit and its therapeutic efficiency.
- Medical care can be effective without being comprehensive. . . .
- Medical services should be organized from the bottom up and not from the top down.
- The health needs of a community must be related to their wants.

The constant effort, in fact, is to get "the maximum return in human welfare from the limited money and skill available."

Primary health care projects around the world have found that the implementation of primary health care hinges on the quality and quantity of communication. "Extension," "health education," and "community orientation" have all tried to capture the essence of the communication process. They are incomplete terms, as they seem to imply unilateral communication from the health services institution to the people. The successful examples have gone far beyond this pattern, stimulating feedback from the communities and recognizing in program design the importance of face-to-face communication between community members.

Primary health care in developing countries consists only partially of services to be performed for people in the curative and preventive realms. It also constitutes a major effort to reorient the health-related behavior of the people by giving them new knowledge and new skills. Preventive and curative services derive part of their utility from their role in support of communication efforts to change health behavior.

For example, in most developing countries diarrhea is a major killer, particularly of small children. At least one-third of all early childhood deaths in Latin America are attributable to diarrhea. Diarrhea kills through dehydration and shock. If oral rehydration is started when the first abnormal bowel movement takes place, the chances of the diarrhea's becoming fatal are greatly reduced.

Curative services for diarrhea should thus be accompanied by a major educational effort to teach the mother of the sick child the procedures for preparing and administering simple water-salt-sugar solutions for oral rehydration. If these are taught to a mother when her child has a diarrheal problem, she has an enhanced eagerness to learn, and she gets immediate feedback on the practicability and utility of the new behavior. The communication is even more effective if the health practitioner uses a "satisfied" mother to help teach the new health behavior. This not only encourages the learning process but also sets a precedent to encourage the mother to communi-

(Continued on page 3)

A publication of the Clearinghouse on Development Communication
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Communication for Paraprofessionals, Participation, and Prevention

by Royal D. Colle

The September 1978 conference at Alma-Ata on primary health care dramatically reinforced the point that innovative efforts are needed if people with little or no access to adequate health services are to achieve an acceptable level of health. Communication can play a key role in support of three important areas of effort in the primary health programs of developing nations: the use of health paraprofessionals, community participation, and preventive health measures.

Paraprofessionals

Various kinds of medical "auxiliaries" (such as midwives and herb doctors) have provided health services to their communities for years. What appears more prominently now is an emphasis by organized, formal health programs on using modestly trained indigenous people for "front lines" health service delivery. Reasons for this official movement away from the Western model of health care delivery vary. One justification is economic: it costs less to train and pay a health promoter than a doctor or nurse. Sometimes there are not enough of the more highly trained people who can or will serve in rural areas. Frequently, too, indigenous paraprofessionals are considered more effective than other health personnel because of their closer identity with the client population.

As important as paraprofessionals are in filling health service needs, their use in development programs is often plagued with problems. Training and support are two areas where more careful attention to communication can reduce problems. Worldwide, there are probably no two programs alike with regard to the duration, content and style of training for paraprofessionals. While in-service training is often built into paraprofessional systems, it is the rare program that has an *effective* in-service training program.

Creative efforts to develop training materials that go beyond current initial and in-service training programs are vital. For example, health promoters attending in-service training sessions can be given tape recorders and cassette tapes to take home, the tapes containing information that reinforces the training and introduces new ideas and techniques. The audiocassette system has important advantages: an audio medium is often easier for the paraprofessional to use, especially if literacy is a problem; it permits the use of drama, interviews, talks, and discussions to convey points effectively; repetition is easy; and the system is relatively inexpensive and durable.

More serious is the widespread problem of reaching isolated village health workers with continual training opportunities. Paraprofessionals are too often given a few weeks' training and then sent to the field and forgotten. Audiocassettes (delivered by mail or commercial products distributors) and two-way radio provide opportunities for needed in-service training; in addition, they can strengthen the paraprofessionals' sense of identification with the parent organization. Good and continual training is no substitute for proper pay and suitable materials support, but it is equally vital, and it requires an explicit communication strategy to make it effective.

Community Participation

Active community involvement in primary health programs has been endorsed in principle by major national and international development agencies. It is not always clear, however, precisely what this participation includes. A community might participate in policy making and management (for example, through health committees), evaluation, financial support of the program, the actual delivery of services, and as beneficiaries.

Whatever form it takes, participation does not happen spontaneously. In Nigeria's Lardin Gabas Rural Health Programme, it begins with a "sensitization" of the community to its needs—often prompted through a personal visit by someone from outside the community. This is a slow, deliberate process. Experience in the People's Republic of China, Tanzania, and elsewhere suggests that the process might be accelerated by using mass media to both encourage and orchestrate participation in health-related programs.

With careful planning, for example, radio broadcasts across a nation can persuade communities that better health is possible and that the people themselves should plan and take an active role in their health welfare. Broadcasts can provide communities with directions on how to conduct simple surveys and organize for action. They can also tie into organized community groups, such as mothers' clubs or cooperatives, to stimulate and guide action, as in the case of "radio forums," which have met with varying degrees of success. Publications and other communication materials might be used in coordination with such broadcasts. Obviously, a health service needs to be well-prepared to meet the consequent demands for resources, from medicines to training for new local health workers.

Prevention

Linked closely with the concept of primary health is the principle that prevention is a more realistic and economical health strategy than is a curative emphasis. As a World Bank Health Sector Policy Paper has noted, curative approaches lessen the harmful *effects* of disease, whereas preventive measures lessen the *incidence*.

A preventive health plan implies not only providing resources such as vaccines, nutritious foods, and materials for developing sanitation facilities, but also addressing the problem of people's inclination and ability to use these resources effectively. That this is no simple task is well-illustrated by stories of people failing to use readily available help for their problems: vitamin A deficiency persists in Java, even though vegetables with an abundance of vitamin A are commonly available to low-income families; health posts go unused in Latin America; and in West Africa, malnutrition has been attributed to a poverty of knowledge rather than economic poverty. Such situations present great challenges to both the health educator and the communications professional.

In a recent American Public Health Association study of 180 health projects in developing countries, one survey question listed 16 kinds of activities and then asked: "How active or interested in this area is your project?" Tied at the top of the list were "health education" and "treatment and care of the ill," with 79 percent of the projects reporting that they were "actively working toward definite objectives" in these areas.

One gains the impression from looking at health education programs, however, that many are sterile, underfunded, and receive low priority for implementation. In a health center in Colombia, a health *promotora* said recently that the doctor who headed the clinic did not really consider health and nutrition education part of his work. In other cases, the front line health workers who bear responsibility for health education do not have the knowledge, time, or backup support to do it properly.

Health educators may also suffer from a reputation of giving boring talks to captive audiences. Those involved in health education should take a look at the approach (if not the techniques) used in family planning communication. The family planning people could not assume they had a product and service that everyone was wildly eager to get. They had to paint signs on elephants, develop radio programs, and train outreach workers to communicate and persuade. The health field needs to approach prevention and education with this kind of dedication, creativity, and enthusiasm.

The health education efforts of paraprofessionals can be strengthened by providing them with tape recorders to use with community groups. Tapes can bear the burden of presentation, with the promoter or a volunteer leading discussions. (Tapes also preserve the integrity of the information.) One side of a tape can give the discussion leader ideas for introducing and moderating the program and gathering resources for use in the session. Tapes can also be used for feedback to project officials. If a library of tapes is prepared, community groups can select their own topics and are not totally dependent on the promoter or on the perception of an outside official as to what is important. This is also a good opportunity to increase community participation.

Radio broadcasting, which reaches so

much of the developing world, is too frequently underutilized as a medium for health communication. If radio is used at all in health and nutrition efforts, the tendency is to concentrate on using large national stations and to overlook or discount the value of local stations for simple education. With a modest amount of training, a local health committee or community health worker can prepare talks, interviews, or short plays specifically patterned to local people. This not only increases participation but can enhance the paraprofessional's self-image as his status in the community increases.

Well-planned health communication programs should involve doctors directly; they usually control the formal health system politically and technically. Doctors will generally agree to be interviewed or talk on a cassette recording or radio program, especially if someone helps them develop the message. Not only do they lend considerable authority and credibility to a project, but they become more supportive and improve a project's chance of success.

People interested in health education find it disconcerting to visit clinics and see people waiting for hours to get service. There is a great opportunity to use these thousands of waiting hours not only to provide information and education, but to make the clinic visit a far more positive experience. In the Philippines, for example, recordings of dramas on family planning originally developed for radio were played in clinic waiting rooms. This idea can be readily adapted to other situations.

It is encouraging to see that in several recent health projects undertaken under World Bank auspices, clinics are being designed to include versatile education facilities. With an assortment of tape recordings and modestly constructed individual listening stations, perhaps supplemented with illustrated booklets, health post visitors can go through a learning program tailored to particular needs. For example, the doctor in a small Latin American village speaks only Spanish; the villagers speak Quéchua. An inexpensive tape recorder could provide taped information in Quéchua on the procedures and benefits of the clinic, the kinds of questions the doctor needs to ask and why, and specific problems such as worms and diarrhea.

The Challenge

One of the most innovative responses to the Alma-Ata challenge to reach more people with effective primary health care would be for health officials to build into their health planning a carefully developed and explicit communication strategy. Careful analysis of individual situations and resources will reveal a much wider range of opportunities than appear in this brief essay. The potential outcome of such efforts argues in their favor: paraprofessionals may function better, participation may become a reality, and prevention might become a major force in improving health. ■

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Community . . .

(Continued from page 1)

cate the new information in turn. Such lateral communication is likely to cover more of the population more quickly and with a deeper impact than would ever be possible merely through the health practitioners themselves.

Patterns of Communication

Three main patterns of communication thus emerge as important to primary health care efforts: "lateral" transmission, center to periphery, and periphery to center. Because of its role in supporting these three patterns, the mass media merit special consideration as a subsidiary pattern.

A great volume of communication is carried by the lateral communication network—the network of friends, neighbors, co-workers, and others with whom one comes into contact in the community. This spontaneous network can carry a surprising variety of messages and a great deal of technical information.

As development accelerates, government planners increase their attempts to reach the population with specific instructions and messages through extension efforts. This communication from center to periphery is most effective when it takes into account the existence of the lateral networks and simplifies messages so that they are likely to be communicated through the lateral network.

In the participatory development model, great efforts are made to increase the flow of feedback from the periphery to the center, a process that helps to refine the messages and begins to empower people to shape their own lives.

Planners and professional communicators often equate development communication with the use of mass media. The mass media are most useful when they feed upon and reinforce the spontaneous communication networks which parallel and support the development effort. In most developing countries, the scope of the development messages carried through the spontaneous networks far exceeds that of the mass media messages. Above all, spontaneous networks are more likely to carry conviction and stimulate behavioral change.

Training the Primary Health Worker

The fact that each of the three communication patterns plays a significant part in health care delivery has profound implications for the training of primary health practitioners. Whether they are auxiliaries or recognized "professionals," primary health practitioners need a wide range of communication skills for providing individual or face-to-face advice, teaching, effectively using other communicators such as "satisfied users" and community leaders, public speaking, leading group discussions, and serving as a resource person for community groups. They need to be trained in the use of role playing, case studies, and demonstrations—powerful methodologies that can be adapted to different settings.

Song, dance, and drama can also be crucial components of primary health care education efforts, as illustrated in the film, *That Our Children Will Not Die,* produced by the Institute of Child Health in Lagos, Nigeria. The film depicts a health project in northern Nigeria in a largely preliterate community where song, dance, and drama are the primary educational media. These media are used to train local health workers, who use them in turn to teach the villagers about such health problems as schistosomiasis, tuberculosis, and malaria.

Simple audiovisual techniques such as flannelgraphs and posters can be used to good effect in many cultures. Such media as films, slides, and videotape, while useful, are frequently too expensive for primary health care efforts in developing countries, and are seen by most developing societies as poor substitutes for demonstrations, cases, or plays.

The more case presentations or plays actively involve community members, depict locally relevant situations, and encourage families and villages to reflect on the practical consequences of certain practices, the more likely it is that new attitudes and knowledge will be translated into new behavior. Demonstrations of health techniques are more successful if they actively involve individuals in trying out new behaviors and discussing the problems and rewards associated with these behaviors. Demonstrations that are purely "observational" or that use tools not locally available generally do not stimulate significant changes in behavior.

Information about desired behavioral changes that are difficult to demonstrate, such as the need to breastfeed babies past 18 months of age or the use of family planning methods, can be communicated through role playing and in a combination of individual and group discussions. In a Punjab project that used such techniques, breastfeeding was extended by an average of five months, from 15 1/2 to 20 1/2 months.

Project experiences around the world thus tend to confirm that community health workers delivering primary health services in the developing world perform different functions than do hospital-based health workers, and they require a different kind of training. While they derive their credibility from basic clinical skills, good clinical skills are not sufficient. Primary health care practitioners are also community communication specialists, and they need skills and training in the use of simple techniques to communicate new knowledge and behavior. Above all, they need commitment to people and to the power of people to shape their own lives. ■

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Popular Planning and Radiophonic Schools: Nicaragua's PRACS Program

by James E. Sarn

In April 1976 the Nicaraguan Ministry of Health initiated an ambitious Rural Health Community Action Program, known as PRACS. By August 1978, when civil war broke out, the people of Nicaragua had started through PRACS an impressive number of community health projects, and the program was well ahead of schedule. The achievements of PRACS are noteworthy in that they took place in a tense pre-war period and within a public health system still suffering the strain of the devastating December 1972 earthquake in Managua. Two elements of the PRACS design stand out as strong contributors to its early success. One was its reliance on the resources of the community; the other was the radiophonic schools.

The PRACS program was designed to address the major health problems revealed by the Nicaraguan Health Sector Assessment, which was begun in 1974 and completed in 1976. The assessment described a health situation typical of rural populations in developing nations: high rates of morbidity and mortality from preventable diseases and malnutrition, high infant and maternal mortality rates, and extensive protein-caloric malnutrition in children, all compounded by insufficient health resources and a soaring population growth rate of 3.2 percent.

A major long-term program of health facilities construction and health manpower development was out of the question at the time, so the Ministry of Health, in consultation with USAID and the local Pan American Health Organization representative, developed PRACS. The objective was to teach each community how to solve its own health problems by guiding it through a priority health project to solve an immediate need, in the process teaching the community problem-solving methodologies.

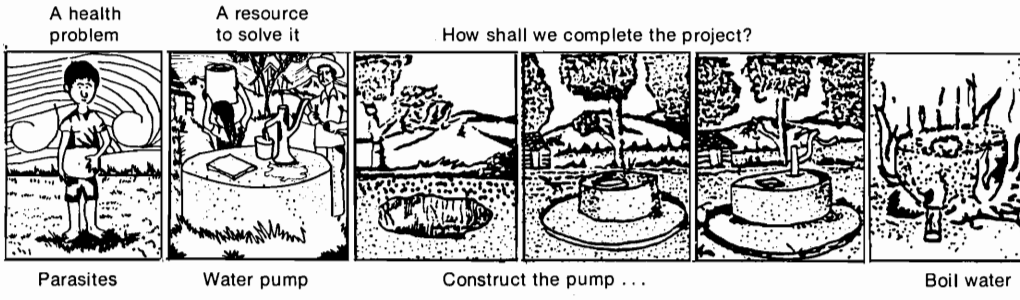
The main components of PRACS, as defined by the Ministry of Health, were:

- the training of health educators;
- the diagnosis of the rural health situation;
- the establishment of community health committees;
- the training of rural health promoters;
- the development of community health projects;
- the implementation of radiophonic schools;
- the development of programs of school health education;
- the establishment of interinstitutional coordinating committees;
- the development of community organization abilities of health team members.

Health Educators and "Popular Planning"

Health educators, trained in community health planning and community organizational skills, lived among the villagers, providing the link between the community and regional and national resources. The health educator initiated health awareness programs, identified formal leadership elements and informal opinion leaders in the community, and trained and supported community health workers.

A series of illustrated planning charts *(see illustration)* was designed for health educators to use at community meetings to give initial direction to the community's health awareness, organization, and planning activities. The charts guided a community health committee as it conducted a simple epidemiologic survey of the community's health problems and needs; evaluated the health resources available in the community; evaluated community skills; reviewed feasible community interventions to reduce an identified health problem; selected priority "health packages" from those available from the health educator; and determined responsibility for accomplishment of specific implementation tasks, a time for completion of the project, and community members to operate, maintain, and evaluate the new health system.



This protocol, called *"Planificación Popular"* ("Popular Planning"), had strong impact both on the health educators and on the community. Health educators, no longer in their traditional didactic roles, were not responsible for insisting that a community practice good hygiene, only for insuring that all options had been considered prior to a community decision. Communities soon recognized the power of the organizational methodology, and for every community scheduled to receive a health educator to help initiate community activities, another two had to be placed on the waiting list.

Many *traditional* health education skills and methods were also used in PRACS, with proper modification. Project personnel worked with the Ministry of Health to modify primary school curricula, train community people as health educator assistants and health collaborators, develop a series of booklets for "Popular Planning" activities, and create the radiophonic schools. While all of these were effective programs, most remarkable in their effect were the radiophonic schools.

The Radiophonic Schools

Based to some extent on the Colombian *Sutatenza* model, the PRACS radiophonic schools were the first in Latin America to focus solely on health. They were designed to supplement the community activities of the health educator by stimulating community participation in health programs and activities and promoting the adoption of specific health behaviors. Each lesson in a radiophonic school course consisted initially of a 30-minute broadcast of instruction and test questions, complemented by community-produced flipcharts. Local commercial transmitters were used for the broadcasts. Several days of spot announcements preceded each course. At a chosen time, the radio listening groups would gather for the broadcast lesson; the health educator or community health worker would flip the charts in coordination with broadcast cues. The first course conducted by PRACS consisted of ten lessons directed toward pregnant women; the second had six lessons for mothers breastfeeding children aged 0-2.

The initial expectation was that the radiophonic schools would impart minimal health knowledge to the villagers and maintain the community's interest in the project in the absence of the health educator. In fact, pre- and post-tests indicated that villagers were increasing their knowledge by as much as 100 percent as a result of the radio-based classes. Further, the follow-up test conducted six weeks after the post-test demonstrated a continued rise in knowledge for villagers in areas covered by the radiophonic instruction. The radiophonic classes were actually being reinforced by the social conversations of the villagers.

Indications of Success

The radiophonic schools were not alone in surpassing initial planning expectations. The initial PRACS goal was to develop various health education and community organization methodologies and evaluate their effectiveness through the implementation of 45 community health programs within three years. By July 1977 the program had attracted two major loans, one from the World Bank and the other from USAID, which proposed to support the completion of 500 major community health projects by 1981. By the end of the first-year evaluation of complementary loan-sponsored activities, some 56 communities had contributed 400 percent more in resources than had been anticipated. Additionally, despite the program's being ahead of schedule,

central government and loan expenditures were less than had been anticipated. The size and complexity of the projects also mushroomed. Simple wells were replaced by six-kilometer aquaducts; community latrines were replaced by family latrines; and basic first-aid trunks were replaced by one-room clinics.

Why these activities flourished in areas simultaneously being infiltrated by guerrillas is not easy to document, yet while other government program vehicles were burned, PRACS personnel were able to travel to isolated communities without incident. The success of PRACS and the respect shown to the health educators seem to have emanated from:

- placing the responsibility for community health activities in the hands of the community;
- respecting and supporting the decisions of the community health committees;
- having health educators live in the communities they supported;
- developing multiple means of communicating with the villagers;
- conducting selective recruitment and providing incentives for health educators and support personnel to work in rural areas.

Many of the planned rural development and health activities pioneered by PRACS have unfortunately been curtailed by the large-scale conflict being waged in Nicaragua and the dwindling resources for health and social programs. Whatever the outcome of this tragic conflict, the health education methodologies of PRACS were beginning to demonstrate their capability and potential for making a significant impact on health problems and bringing pride and respect to the villager. ■

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Project Profiles on Health

A series of two-page summaries, or *Project Profiles*, of development projects that involve the systematic use of media are published quarterly by the Clearinghouse. *Profiles* currently available on health communication projects include the following:

The Pila Project (Guatemala)
Man Is Health, or *Mtu ni Afya* (Tanzania)
Telemedicine in Alaska
The Danfa Comprehensive Rural Health and Family Planning Project (Colombia)
Zaa na Uwatunze, or the Kiroboto Show (Kenya)
Promotores de Salud, or the Rural Health Promoters' Program (Guatemala)
Radio Doctor (Haiti)
The Kavar Village Project (Iran)

Project Profiles are available at no charge from Judy Brace of the Clearinghouse.

Health Care for the People, by the People: Project Piaxtla

In the Sierra Madre of Sinaloa in western Mexico lies a rugged region untraversed by even the most primitive road. Referred to as *las barrancas*, the region is dotted with small villages and ranchos linked by narrow mule trails. The majority of the people, of mixed Indian and Spanish extraction, live on a subsistence level, suffer many physical hardships, and are plagued by diseases endemic in poor communities—pellagra, intestinal parasites, tuberculosis, leprosy.

Although Mexico's public health program has made important advances, its services do not effectively reach this vast mountain area, so the people must rely on their own resources for health care. Folk healers include *curanderos* (herb doctors), witch doctors, bone setters, midwives, spiritual healers, and, more recently, *médicos practicantes*, or empirical doctors who, although untrained, obtain and administer many modern medicines. All of these folk healers provide important services, but health care remains inadequate. Malnutrition and infectious diseases are prevalent; even minor injuries and ailments often become serious and are sometimes fatal.

The Community Health Care Network

Project Piaxtla, a health care network run by *campesinos* (farm people), covers several thousand square miles and serves a population of some 10,000 persons in more than 100 small settlements and villages. It attempts to involve the communities in a process of meeting their own health needs in a humane, economically realistic, ecologically sound manner.

The project has evolved slowly since 1963, when David Werner, an American biologist and former high school teacher, first hiked through *las barrancas*. Struck by the enormity of the people's health problems, Werner later returned to work with them.

Villagers were involved with the health work from the start. For a number of years, however, many health services were provided by American volunteers, the net effect of whose presence was to increase the villagers' dependency on outside assistance. The decision was finally made that all outsiders, including visiting professionals, would come not to provide services but to teach, not to practice their respective skills but to train others.

Today the community-based health program is run and staffed completely by local villagers. The main referral and training center, in the small village of Ajoya, operates an out-patient (and occasionally in-patient) clinic, complete with laboratory and X-ray facilities, and provides dental, veterinary, and orthopedic services.

Over the years increasing emphasis has been placed on preventive medicine and health education. Early and sensible curative medicine is considered part of prevention. Every clinical consultation is seen as an opportunity to discuss with the sick person and his family the causes of his ailment, its rational treatment, and how to avoid it in the future.

The Ajoya center conducts an "Under Fives" clinic and classes for mothers, and involves families and school children in a variety of public health activities, including construction of latrines and preparation of garbage disposal areas. The dental preventive program, which focuses on preschool and school children, includes systematic application of fluoride and instruction on the care of the teeth.

Training the Village Health Worker

Perhaps the most important activity of the program is the training of village health workers, called *promotores de salud* (health promoters). Selected by their own remote communities, the *promotores* spend two months training in Ajoya. The "learning through doing" approach to training includes preventive and curative medicine, with a strong emphasis on community organization, *concientizacion* (consciousness raising), and teaching techniques.

The training teaches a respect for the use of local skills and materials. *Promotores* learn to stage "campesino theater" productions to convey health messages. They make "gourd babies" to illustrate principles of dehydration. A "birth box," made from a cardboard box, is used to demonstrate problems that occur in the birth process. Supersized flannelgraphs are used for matching games that help the *promotores* learn the proper use of antibiotics. A chart with movable parts, created by the resource center team, shows the invasion pattern of respiratory infection.

Promotores learn how to set broken bones by practicing on an "arm" made from sticks and a piece of innertube; how to make casts from the juice of a local plant and how to pad them with wild kapok; how to suture by practicing on a surgical glove. They also learn to use the health care manual, *Donde No Hay Doctor*, not as a textbook to be memorized, but as a tool, a source of information that they can share with the villagers.

At the end of the training, the *promotores* return to their villages, where they serve in isolation, totally dependent on the skills they have learned—and on the resources of the community.

Working toward Self-Sufficiency

Having achieved self-sufficiency in terms of personnel, the village health team is now working to achieve financial self-sufficiency. The *promotores* in outlying villages work only part-time as health workers, continuing to earn their living through farming; they collect very modest fees for their services, providing necessary medication at cost.

Their communities contribute half the cost of their room and board during the training program.

Financial self-sufficiency has proved far more difficult for the operation of the referral and training center, which now has six full-time and four part-time salaried workers. The team has undertaken various activities to help meet program expenses, including chicken and hog raising, a cooperative corn bank, and a vegetable farm. All clinic workers put one-third to one-half of their time into these activities, which not only bring additional income into the center, but also help to upgrade the nutritional level of the village and serve as a model for improved farming.

Villagers may pay for health services with either money or work. During the summer rainy season, "work fiestas" have been conducted, in which many villagers pitch in to plow and plant fields loaned to the clinic. For two hours of work, a family receives credit for a consultation, complete with medicine if needed.

Project Piaxtla and Other Programs

One recent development is that the project appears to be self-seeding. A group of villages in Durango, peripheral to the area of coverage of Project Piaxtla, has long been eager to start a similar program. In 1976 a member of the Ajoya village team began to help the villagers of the Huachipetas area of Durango organize and raise funds to build a health center and train health workers. Community participation has been phenomenal. The new clinic is already completed, and three health workers from the area participated in the 1978 *promotores* training program in Ajoya. Project Piaxtla has also begun a program of student exchange with other rural health programs in more distant parts of Mexico and as far away as Honduras.

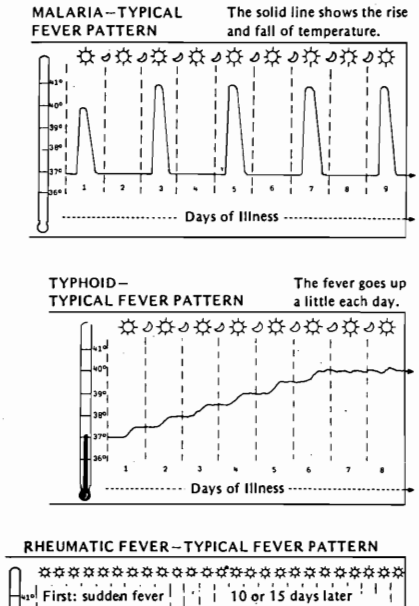
Project Piaxtla has no formal ties with the Mexican Health Department. However, it collaborates with health authorities in vaccination campaigns, malaria eradication, and tuberculosis control. The Ajoya clinic has special arrangements for patient referral to doctors on the coast who sympathize with the community-based program and charge reduced rates to those who are poorest.

Project Piaxtla is in some ways similar to other community-based health care endeavors in Latin America. It differs from most, however, in the following ways:

- It is completely run and directed by the villagers themselves.
- Most financing for the ongoing program is generated locally. Any fundraising through outside sources is undertaken by the local team.
- The program is run, directed, and supervised completely by local nonprofessionals; visiting professionals are secondary to and supervised by the local team.
- The medical sophistication of the local nonprofessional team is exceptional. Health promoters are able to cope adequately with 80 to 90 percent of the patients they see; the village team in Ajoya can adequately manage 98 percent of patient visits. For the most part, the team provides appropriate care at far lower cost than that received by patients who go to distant medical facilities.
- The project has a vision of community health that includes equity and social and political justice. The local team is increasingly confronting controversial social issues as it discovers that the health of people depends as much on these factors as on "health care" in the more limited sense.
- Emphasis is placed on sharing knowledge and treating everyone as equals. An attempt is made to demystify medicine—to make it both simple and sensible.

LA FIEBRE (FEVER)*

Correctly speaking a *fever* is a body temperature higher than normal. But in Latin America, a number of serious illnesses that cause high temperatures are all called *la fiebre*—or "the fever." To prevent or treat these diseases successfully, it is important to know how to tell one from another.



*from *Where There Is No Doctor*

Often the health worker will open a book and read about an illness together with the sick person. There are no uniforms, diplomas, or other ordained structures to institutionalize health care or separate the health worker from the people. ■

Project Piaxtla was David Werner's original motivation for writing the village health care manual, Donde No Hay Doctor, published in 1973. The expanded English version, Where There Is No Doctor, *is reviewed beginning on this page.*

BOOKS. . .

for the Village Health Worker

Where There Is No Doctor: A Village Health Care Handbook, by David Werner (Palo Alto, California: Hesperian Foundation, 1977), 403 pages.

David Werner went to Mexico about 15 years ago, to an area where people living in remote mountain villages had little access to health care. He joined them in their efforts to improve their health, encouraging them to assume responsibility, as a community and as individuals, for their own health maintenance and curative care.

The methods they developed and learned appeared in 1973, in Spanish, as the first edition of *Donde No Hay Doctor*, a guide for health care in villages where there is no doctor. Revised Spanish editions appeared in 1975 and 1976, the changes primarily reflecting Werner's and the villagers' increasing skill in handling the basic preventive and curative aspects of health care in the absence of conventionally organized health services. The Spanish edition is now being used as a training and work manual in at least 15 Latin American countries. In 1977, the English edition of the book appeared under the title *Where There Is No Doctor;* it is already being used as a training manual in at least 100 countries. Portuguese and French versions are in process.

The standard medical content of the book has been reviewed by a panel of physicians and is factually accurate, covering the health problems commonly seen in the developing world. It discusses the right and wrong use of modern medicines, antibiotics, injections and how to give them, first aid, nutrition, preventive measures, common illnesses, the usual rundown of diseases of the various systems, midwifery, family planning, and pediatric and geriatric principles. The final section, "The Green Pages," is a formulary for use by the village health worker, listing drugs by generic name, and indicating uses, dosages, and precautions. Spaces are provided for the health worker to note the cheapest and best locally available form of each drug and its cost.

Werner wants the information in the book to be available wherever it is needed, encouraging its accessibility through two unusual policies: *"Any part of this book may be reproduced without permission, provided the parts reproduced are distributed free or at cost,"* and *"The book is sold at a lower price to those living in poor countries than to those in rich countries."*

Where There Is No Doctor is a pleasure in both the English and Spanish language editions. It obviously grew out of extensive local experience and a lot of caring and is simple in presentation without being patronizing. It builds upon a respect for that

which is good in home cures and popular beliefs (tea made from willow bark will help bring fever down and stop pain), and criticizes candidly and fairly those folk cures and beliefs which are harmful (turning a baby upside down and slapping his feet will not cure a sunken fontanel, or soft spot). The book tells, more than any other such guide, why things happen and how curative or preventive measures work.

Werner himself drew the illustrations. He is in no way a professional book illustrator, but his knowledge and understanding of the village give his drawings a relevance unachievable by a professional far from the scene. He is a marvelous educator. He knows how to simplify and how to emphasize what is important, stating the essence of instructions in succinct sentences that are often printed in boldface type and enclosed in boxes so that the information can burn into memory and is easily located.

The English edition adds an introductory chapter, "Words to the Village Health Worker," that suggests ways to best use the book, how to teach health, and how to relate to the people with whom one is working to improve health. This chapter is well worth adding to the Spanish and any other editions.

Written specifically as a guide for village health workers in a mountain valley in Mexico, the manual is in reality the product of a long learning process by Werner and that community. As such, it has great strength for its place, but might or might not travel well to other locations and cultures in its exact form and as a specific guide. The cultural and health *proscriptions* of one area may well be the *prescriptions* of another. Werner recognizes this possibility and addresses it in the first English edition, written for adaptation in Africa and Asia: "To be fully useful, this book should be adapted by persons familiar with the health needs, customs, special ways of healing, and local language of specific areas" — a crucial caveat in a book that grew so completely out of the soil of one culture. That it is worth adapting is unquestionable; it has the universality of good basic health knowledge presented in an effective format that will lead to its being not filed away in the library of the Ministry of Health, but placed in the hands of village health workers and used daily by them. With careful adaptation to the realities of each culture where it is used, *Where There Is No Doctor* is in a fair way of becoming a classic. ■

English edition available from The Hesperian Foundation, P.O. Box 1692, Palo Alto, California 94302, U.S.A., or from T.A.L.C., Institute of Child Health, 30 Guilford Street, London WC1N 1EH, U.K.

Spanish edition available from Editorial Pax-Mexico, Rep. Argentina, 9, Mexico 1, D.F., Mexico, and also from The Hesperian Foundation and T.A.L.C. at the above addresses.

Reviewed by Dr. Harold Royaltey, director of community health programs for Project HOPE.

for the National Health Planner

Manpower and Primary Health Care: Guidelines for Improving/Expanding Health Service Coverage in Developing Countries, edited by Richard A. Smith (Honolulu: The University Press of Hawaii, 1978), 189 pages.

The Health Manpower Development Staff (HMDS) at the University of Hawaii has been working since 1974 to design an approach to organizing improved and expanded primary health care systems in developing countries, taking into account that while capital-intensive development is inappropriate for many developing countries, there is great potential in their human resources. *Manpower and Primary Health Care*, written jointly by past and current members of HMDS, describes the model they have devised—the MEDEX approach—including detailed discussion of the steps involved in planning, implementing, operating, and evaluating such a system.

MEDEX is a three-tiered health-care system involving doctors, intermediate-level doctor extenders, and village-level doctor extenders or community health workers (CHWs). The term *doctor extender* in French (une extension du médecin) yields the word *medex*, used to describe the intermediate or mid-level health worker who serves as a link between the doctor and the village health worker.

Under MEDEX (used in capital letters to refer to the system), the doctor is responsible for managing and supervising the health care system for a reasonably large geographical area (serving 50 to 100 thousand people) and solving the more serious medical problems through referrals. The medex, who receives from 12 to 18 months of training, ideally serves from five to ten thousand people and has curative primary care responsibility for that community. The CHW is chosen by his community and receives only a few weeks of training. Serving more as a "change agent" for a population of 1,000 or less, the CHW has primary responsibilities in preventive and promotive services, with only limited curative responsibilities.

MEDEX emphasizes the importance of the multiplier effect of training, as each medex can help train CHWs and other medex personnel. The system also attaches great importance to management skills, as these can assure either the success or defeat of a primary health care program. The MEDEX approach promotes a nationwide health delivery system in which workers at the village level can be self-sufficient, and which requires little external technical assistance once the program is operational.

HMDS analyzed the experiences of 12 countries in devising the MEDEX model, combining this knowledge with its experience in the U.S., Micronesia, Thailand, Pakistan, Lesotho, and Guyana. The model is thus very flexible, including a program component for adapting it to cultural variables.

Working with the ministries of health of a number of developing countries, HMDS has devised a program for training the mid-level, or medex, workers. The medex training program is really an evolving system, referred to as the System of Teaching Essentials to Medex (STEM). It consists of: 1) a series of prototype or "generic" training modules covering the spectrum of tasks usually assigned to a mid-level worker; 2) an administrators' training program; 3) a program for adapting these modules to fit health, administrative, and cultural variables specific to a locale; 4) an adaptable program for actually implementing this modularized curriculum; and 5) a program for training prospective trainers in the use of the modules.

The basis for STEM is competency-based training, which relates content directly to job performance. Another distinguishing factor of STEM is the evaluation procedure: the student knows when he enters the program what the desired outcomes are, and his successful completion of the program is based on attaining these competencies.

The STEM training program is currently divided into three phases: modules, rotation, and preceptorship (plus continuing education). During the module phase of training, students focus on mastering the skills and knowledge presented in the modules; in the rotation phase, they are trained in patient management skills as they work in a series of outpatient clinics; in the preceptorship phase, they learn to function in their actual job situation under close supervision.

By June 1977 three programs had used the STEM competency-based modules to train mid-level health workers: the MEDEX/Pacific Program (Micronesia), the Lampang Health Development Project (Thailand), and MEDEX/Guyana. Student and instructor acceptance of the learning materials and methods was high in all three groups. Programs in Pakistan and Colombia have recently begun to implement MEDEX-based systems.

The final chapters of *Manpower and Primary Health Care* set forth guidelines for program operations and evaluation, including a detailed discussion of the role, selection, and support of the community health worker. The success of a CHW program ultimately depends on its adaptability to the needs and resources of the village community—and, the author adds, on continued encouragement and supervision by the medex.

The MEDEX primary health care system is, in practice, an evolutionary process. As the CHW works in the community, under medex supervision, the community begins first to accept new health concepts, then to increase health knowledge and health-seeking behavior. The CHW is progressively taught new skills; communities and traditional health practitioners may request training courses; and the people continue to incorporate modern health practices into their lives. This process is aided by health educa-

(Continued on page 15)

Beans in a Bowl

observations on communication and adult education in developing countries

by Andreas Fugelsang

"What does not happen in the village does not happen."

I am not an educator. I am approaching the question of nonformal education hesitantly and merely on the basis of some practical field experience in development programs on nutrition, maternal and child health care, primary health care, and human settlements.

Progress in these areas depends very much on a process that is nowadays called, somewhat loftily, *social communication*. For programs that are operational on a national scale, social communication is concerned particularly with communication management and organization—people who prefer another terminology would say with *political organization*. Some kind of organizational framework seems to be a prerequisite if social communication is to take place at all.

The meaning of the concept of *public participation* is presumably that people take part in something. It is possible that those who feel the urgency for developments in the field of nonformal education should forget about educational gimmicks and concentrate their efforts on a structural change of society, on the development of an organizational framework that permits genuine participation by the people. Nonformal education is generally ineffective because it is generally nonpolitical. All progress starts and ends in the village.

"It serves no purpose to disguise the fact that the ultimate effect of social information processing is transfer of authority."

When Cuba's literacy campaign started in 1961, all schools and universities were simply closed, and teachers and students were sent to the rural areas to teach the villagers to read and write. It is not unlikely that this educational revolution was an outstanding success. The illiteracy rate was, in a few years, reduced from about 25 percent to less than 4 percent.

I am deeply suspicious of the professional attitudes of and value judgments made by educators and communicators alike—my own not excluded. The educational elite is surviving its own ineptness by continually reinforcing the bulwarks of its professed professionalism. Whose privilege is it to define the learning needs of the deprived and the poor? The educationalists have for too long betrayed the people with their professionalism.

All these bits and pieces of well-meaning efforts for the enlightenment of the masses! A society's nonformal education "system" is at best a cluster of reflections of its power structure. It demonstrates the misconception that people are objects to be formed or cases of ignorance to be treated, not human minds whose creativity is the ultimate resource of any social development.

My friend Ato Kassaye from Dessie in Welo Province in Ethiopia is a poor farmer, he is illiterate—and he is of exactly the same opinion.

He has a grain storage house of a size that has been determined through long tradition. He knows that if the house is full he has "enough" food for his family, and if the house is not full there shall be starvation before the next harvest. The agricultural extension worker insisted on knowing how many goatskin bags of grain Ato Kassaye carried from the field and emptied into his storehouse. Ato Kassaye could not count, but a remedy was found. He was asked to place a red bean in a little clay bowl for each bag he carried to the storehouse. He should then give the bowl of beans to the extension worker so that *he* could do the counting. It so happened that one day, when Ato Kassaye was about to place a new bean in the bowl, he discovered that all the beans he had put there before were gone. The whole mathematics had disappeared, eaten by the cunning birds of his heaven.

You cannot win when all the odds are against you.

Ato Kassaye gave up the calculations, carried the rest of his grain to his storehouse, assessed that it was "not enough," and went down the valley to drink *talla*. He did not need to know how many bags there were.

Attitudes and Learning Needs

Adult educators seem to be teaching adults as they have been taught to teach children. At best, they are a little more courteous. When shall we begin to understand that it hurts to be "uneducated" and "underdeveloped," to be told that what you do is a mistake, what you have done is inferior, what you should do you do not really know.

It is *not* the privilege of an educator to list requirements in terms of knowledge and skills for what is supposed to constitute an educated adult. He behaves as if he were listing empirical facts, when he is in reality making a series of value judgments. It is an extremely dubious enterprise to try to assess people's learning needs from a perception of their social situation. To jump further to definition of competency needed, design of curricula, and development of course plans is unrealistic and culturally oppressive.

Extension workers and adult educators in the field are slow to realize that youngsters and adults may have other priorities than education, and that no learning experience will work unless these priorities are integrated into it. It is said that there are many bright, experienced, and devoted fieldworkers in agriculture, public health, and adult literacy. However, the systems that educate fieldworkers also produce some educational tyrants. It is fundamental attitudes that count, and the fundamental misconceptions that permeate our thinking and our "systems" are dangerous. Our educators are basically taught—by implication of attitude—that they will meet superstition, deference, and ignorance in the village, and that is why they meet precisely that.

"It is time to demystify the notion that the intentions of the educational establishment are of a nobler nature than those of others."

We are still far from recognizing that people realize themselves in social development and economic productivity, not through better knowledge, but through more confidence. When people feel they need better knowledge, they always find a way to acquire it. If there is, in that moment, an educational offer available, so much the better. Educational efforts and government incentives are important, but they cannot release the creative energies of the individual or the community for social development. Fundamental trust can.

Youngsters and adults alike will learn a skill or acquire new knowledge if they perceive it as a priority within the "horizon" of their own interests, within the borders of what they can see as meaningful to them. People have a perception of the world, of themselves, and of their relationship to others, a personal social role definition within which they act and behave. The relevance of a new skill or new knowledge is a function of this role definition. The challenge for the educator is not the imparting of new skills, but, as it has often been said, literally to "open up new horizons." People can become aware of themselves and the role they have defined for their behavior, and they can change it. It may be the task of the educator to assist in that transformation.

Maybe the need is not for an educator who can define learning needs, but for a collaborator who can help people to see the causes of the problems of their everyday life, to become aware of the possible solutions, and to animate the action for improvement of the situation. People have in actual fact always practiced a self-directed learning style. The task may be to prove to people—make them "see"—that in this process there are tools to use, that the knowledge and experience of others may be of value, that participatory learning experiences are important, that debating skills make a difference,

and that self-determination is possibly the purpose of it all. The latter is the point where education cannot avoid becoming political.

Ato Kassaye will learn to count his bags of grain the day he finds the concept of counting more useful, more meaningful in his life, than the concept of "enoughness" that is now embodied in the design of his grain storehouse. We should learn to trust his judgment.

The Illiterate Majority

For a discussion of nonformal education, it may be useful to recapitulate the statistical picture. The core target of the educational effort—indeed, of any development effort—is the poorest part of the population, which is also the part that is not literate.

The average rate of illiteracy in 1970 for those 15 years of age and older was as follows: Africa, 74 percent; Asia, 47 percent; and Latin America, 24 percent—with dramatic deviations in some (particularly poorer) countries, like Ethiopia, 92 percent, and Bangladesh, 78 percent. The picture becomes more interesting from an educational perspective if we break it down. The rate of illiteracy is, for example, significantly higher in rural than in urban populations. I mention at random from 1971:

	Rural	*Urban*	*Total*
Indonesia	47.8%	23.3%	43.4%
Dominican Republic	43.4%	19.0%	32.8%
Bangladesh	80.0%	51.1%	78.4%
Togo	93.6%	70.9%	90.3%

Progress has been slow: a country like Sudan improved its rate in the ten-year period 1956-1966 only from 88.8 percent to 85.3 percent. It is a question whether the population growth has actually outflanked the growth in educational programs.

Another important feature of this picture is that the rate of illiteracy is so much higher among the *elders*. Again some figures at random showing the difference between two age groups:

	15 - 64	*65 and over*
Zambia	52.7%	81.8%
Indonesia	43.4%	79.9%
Dominican Republic	32.8%	67.8%

One may say that not only has the universal primary education effort failed, the adult education effort has also been insufficient.

The final detail of interest is the fact that the rate of illiteracy is consistently higher among *women*. When, in 1966 in Sudan, it was 98.4 percent for those over 65, it was 100 percent among the women.

The statistical picture provides us certainly with the overall imperative for educational work, and also with details of importance for our understanding of what we are trying to do.

But first some words about information processing in society.

The Social Role of Information

Information (knowledge) is power, in the sense that those who do not have access to information are powerless. For the individual, information is the opposite of uncertainty. Access to information is reduction of uncertainty. It serves no purpose to disguise the fact that the ultimate effect of social information processing is transfer of authority. (Jarco Cerha, *Order without Authority*. Oslo: Markedskommunikasjon No. 1, 1973.) Political will is recognizing that people have the right to know, and acting accordingly.

Information is processed by a wide variety of social formations, of which educational institutions represent only one sector. These formations can be demystified and seen purely as networks of vested interests that are engaged in a process of social interaction and communication—most often in enlarging and perpetuating themselves. It is also

"Access to information is reduction of uncertainty."

time to demystify the notion that the intentions of the educational establishment are of a nobler nature than those of others.

It may be a fruitful point to bear in mind that public information, formal and nonformal education, and other activities in the field of social communication should ultimately and ideally occupy themselves with solutions to the problem of redistributing the information resources of society—a process that should lead to a larger degree of equality in the total social communication system.

Learning Styles and Information Processing

Mama Mukahamubwatu from Mapanza Village in the Southern Province of Zambia is 80 years old. She has developed the language she needs. If a thing or a plant has no use, it has no name, either. Her own name expresses the same economy of thought: *Hamubwatu* means, in Tonga, "he-who-drinks," and *Mukahamubwatu* means "she-who-is-married-to-he-who-drinks." The old lady knows the name of and can easily find more than 250 different plants in the bush. The seeds of the Mukula tree help against skin infection. The roots of Tamba-Kondo are pounded to a paste and smeared on the scalp to prevent lice—and it works! (G.W. Harley, *Native African Medicine*. London: Frank Cass & Co., 1970.) Mama Mukahamubwatu is illiterate, but it is difficult for me to understand that she should also be thought uneducated.

Let me stress that however prevalent the term "illiterate" is in literature, I find it distasteful. A negation of "literate," it carries a discriminatory notion: being illiterate is by implication something less desirable, less valuable, than being literate. Social anthropological research indicates that deeper insights are available. (A. Cole, et al., *The Cultural Context of Learning and Thinking*. N.Y.: Basic Books, 1971.) There is no such thing as a "primitive" mind—a stage of mental development that is "lower" than that of an educated person. Thought processes of all people are functionally equivalent, and they can be inferred from people's linguistic behavior.

The traditional village community has, if we allow ourselves a vague but reasonably acceptable generalization, a few functional features that are important from an educational point of view. The *learning style* of the village is radically different from the Western-inspired tutorial class. Learning is not concept-based, but rather an extra-linguistic process. Clearing the bush for a *chitemene* garden, threshing with the oxen, preparing millet for the beer-brewing—these are not learned as much from situations designed to transmit information orally as from observation. The child learns from direct interaction with the objects of the adult community, from following as a "little adult" literally in the footsteps of the working mother or father. This does not mean that "school-like" situations for transfer of information are not used. There may be, for example, instituted, verbalized situations during initiation periods for women and men, but even then learning seems to take place just as much from observation of the "instructor's" ritual behavior.

If we want to understand the problem of motivation in nonformal education, we must understand that there are different learning styles, different—and culturally conditioned—modes of processing information. The unmotivated student is a student accustomed to another learning style.

We should understand also that a language is more than a string of words; it is a whole life style. Mama Mukahamubwatu's methods of classifying fruits, berries, and plants are quite different from those of botanist Ponsonby. Her classification system generalizes from the overt properties of the object-members of the system and are therefore obviously limited by concrete experiences and by observations she has made. Is the ability to abstract an unqualified advantage? When Mama Mukahamubwatu is introduced to a logical syllogism, her answer will more likely be dependent on the practical content of what is said than on the "logical necessity," because understanding the words that way is for her simply "more sensible":

"In the traditional, illiterate society, everybody's survival depends on the memory of the elders—and this is why the elders sometimes fear the progress of education."

a) All elephants in Luangwa Valley are white.

b) Bambo Nyierenda saw an elephant in Luangwa Valley. What color was it?

Answer: Why do you ask me? Ask Bambo Nyierenda. He was there!

Our thought processes are not different,

but our classification systems are.

Another feature of vital importance for information processing in the illiterate community is the people's extraordinary *memory*—a phenomenon that has struck many competent observers. (Leonard Dools, *Communication in Africa*. New Haven, Conn.: Yale University Press, 1961.) Evidently, in the absence of a written language there is no other means of information storage. The illiterate Bedouin cattle trader must remember every promise of delivery he makes and every transaction he has. His whole business depends on his ability of correct recall. He knows it and his clients know it. A word is a word.

The method of building and the measurements of a *tukul*-house are stored in the memory. Precisely where and when to find the best clay, how to mix the clay with straw and water so that it does not crack on the walls later—such vital information is stored in minute bits in the memory of the building masters.

The whole culture is stored in people's memories. This is the significance of an oral tradition, and in this situation the elders have the power, because they control the information resources of the community. It is the old woman who knows the secrets of beer-brewing, or how to avoid fungus on the groundnuts. It is the old man who knows the bush lore or how to run young oxen in for plowing. In the traditional, illiterate society, everybody's survival depends on the memory of the elders—and this is why the elders sometimes fear the progress of education. The memory loses its importance when information can be stored and processed through the written word.

As the statistics in a preceding paragraph bear out, a strategy for nonformal education cannot afford to ignore these fundamental phenomena. The traditional learning styles will not change for decades to come, and the memory of the elders will remain the most important device for information storage.

Or is it so that, as in Cuba, political will to structural change is the only real solution? ■

Part two of "Beans in a Bowl" will appear in the next issue of DCR.

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A center for materials and information on important applications of communication technology to development problems, the Clearinghouse is operated by the Academy for Educational Development, a nonprofit planning organization, and supported by the Development Support Bureau of the U.S. Agency for International Development as part of its program in educational technology and development communication.

Readers are invited to submit typed manuscripts of no more than 1000 words and to send in photographs.

Bridging the Medical Language Gap in Alaska

by M. Walter Johnson

In Alaska, where communication has long been a vital part of the primary health care delivery system, health personnel are formally addressing an aspect of communication that is frequently overlooked: the importance of giving attention not only to the mechanical but also to the human or behavioral aspects of communication practices. Specifically, they are looking for ways to neutralize the training and language differences—and thus improve communication—between community health workers and their physician-supervisors.

Alaska's 210 Community Health Aides (CHAs) provide primary health care to some 40-50 thousand residents of 171 native villages of rural Alaska. The CHAs are nominated by their villages and trained at one of three training centers in three sessions of three or four weeks each, for a total of ten weeks. This training is supplemented by on-site training in the villages by Public Health Nurses, supervisors who are usually mid-level practitioners, and physicians.

Although the CHAs practice in remote areas, far from direct supervision, they are in constant communication with medical backup and support personnel. The mechanical arrangement for this contact may be single sideband high-frequency radio, telephone via satellite, or more conventional telephone, depending on village location. (See *DCR* Issues 17 and 26.) The typical pattern is for the hospital-based physician to make radio contact with each of the surrounding villages once a day, five days a week, and for hospital personnel to monitor for emergency calls evenings and weekends. In the radio contact, the CHA reports the symptoms of difficult cases and receives the physician's instructions for treatment. The physician-supervisor has years of training and a highly developed medical vocabulary; the CHA has ten weeks of training and as little as several months' exposure to medical terms. Hence the communication gap.

The CHA trainers address the communication problem during the formal training sessions by placing emphasis on developing the CHA's ability to gather information from a patient and to relay this information to her physician contact by radio or telephone. The health aide learns to organize her patient encounter data consistently under set headings: Subjective, Objective, Assessment, and Plan (SOAP). For consistency and reinforcement, health problems are presented during instruction in this format. The CHA practices writing SOAP patient encounter records under supervision while seeing patients in the clinic during training. The teaching staff introduces medical terms in training sessions only when there are not more common terms to serve the purpose, and then only those terms that are used in day-to-day primary care practice.

In a further effort to improve communication, the three Alaskan health aide training centers recently cooperated in producing a community health aide manual, *Guidelines for Primary Health Care in Rural Alaska* (1976), using the SOAP method to organize the contents. The students use the manual in the training sessions, then take it home with them to their village clinics. The manual was reviewed by the family practice and specialty physicians who provide the day-to-day medical supervision and referral services for the CHAs. The manual serves as a common ground to improve and facilitate communication. The CHA is encouraged to refer to the manual in organizing and presenting the patient encounter. New physician-supervisors are encouraged to study the manual and to refer to it during radiophone contacts. This expedites communication and reduces possibilities of error in interpreting instructions for treatment, including dosages of medicines.

The manual is also a necessary medical reference, as the CHA is frequently compelled to manage patients without medical contact because of atmospheric conditions unfavorable to high-frequency radio transmission, unreliability of local electrical power, or failure of ground equipment of the satellite telephone.

Many CHA instructors have felt that while emphasis has been placed on the training of aides, insufficient attention has been given to training those who give the follow-up teaching in the villages or provide the remote medical supervision. Now all physicians new to the health care system are given orientation in how to communicate more effectively with CHAs and support their work. Several days of orientation training are also offered to Public Health Nurses and health aide supervisors.

Communication is ultimately a two-way exchange between people; it cannot be assured by the presence of technical or mechanical systems. Effort must be exerted by both the village aides and the health professionals to modify their language and thinking to accommodate each other. ■

Guidelines for Primary Health Care in Rural Alaska *is available from the Superintendent of Documents, U.S. Government Printing Office, Washington, D.C. 20402, U.S.A. Stock No. 017-026-00049-6, U.S. $6.30 (shipping in U.S. included).*

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Self-instructional Health Teaching Modules for Africa

by James W. Lea

The concept of "appropriate technology" continues to expand its influence on development communication. Funding agencies, program administrators, and consumers in many countries apply the criterion of appropriateness, not only to the local utility of hardware, but also to the compatibility of new development methods with existing cultural, social, and infrastructural systems. Appropriateness has been a key consideration of the African Health Training Institutions Project (AHTIP), a network of institutions in six African countries that have worked cooperatively for the past six years on the development of teaching materials, curriculum guides, and innovative training methods for family health care delivery.

The AHTIP project, administered by the University of North Carolina at Chapel Hill, has produced a library of 215 self-instructional units on family health topics, written by African medical, nursing, and midwifery faculty members. The library is organized in 12 subject areas according to the family life cycle concept, including such areas as the nature of the community; conception and infertility; pregnancy and birth; puberty, maturation, and marriage; and other subjects chosen by the authors as especially relevant to the health of the family in Africa. Sample titles of individual units include "Planning Community Health Examination Surveys," "Social Aspects of Female Infertility in Nigeria," "Nutrition in Pregnancy," "Interpretation of the Weight Chart and Its Significance in Child Health," and "Causes, Treatment, and Prevention of Malaria."

Self-Instructional Materials

The self-instructional mode was selected in the light of the high student-teacher ratios in many developing country institutions, with the expectation that self-instructional materials would allow students more independence in their learning and teachers more flexible use of their instructional time. The units are particularly useful as supplements to lectures or demonstrations, as basic student preparation in a subject area, or as assignments for extended work by students who learn at markedly different paces from their classmates. The materials do not replace the teacher as the cornerstone of a course, but they do make it possible for students to learn effectively on their own initiative. Moreover, because they are written in and for Africa, the units teach knowledge, skills, and approaches directly relevant to African health care problems.

Each self-instructional unit is designed for a specific student level, although most may be used with a variety of levels. The typical unit contains a statement of instructional objectives, a pre-test, and a sequence of information-practice-feedback cycles. In each cycle the student is presented with a small block of information (two to four paragraphs) or with instruction in a clinical or public health procedure. The practice step requires the student to answer questions about the information, apply a procedure, solve a problem, or otherwise actively use the information. The feedback step provides the correct answer or some other way for the student to check his or her practice. The self-instructional unit ends with a post-test, a bibliography, and a learner evaluation form.

The units, printed as 8 1/2" x 11" booklets, are inexpensive to print and mail. They are illustrated with line drawings and black-and-white photographs. (A few initial units contained 35mm color slides, until it became clear that the lowest media technology level that could be used effectively would guarantee the widest distribution and utility of the units.)

Creating the Materials

The self-instructional units have been written in a series of one-week workshops, conducted by African and American consultants at participating institutions in Cameroon, Egypt, Ghana, Kenya, Nigeria, and Sudan. During the workshops, institutional faculty members are introduced to the theory of instructional design and the process of writing and using self-instructional materials. Each faculty member then drafts a self-instructional unit, with assistance from the workshop leaders. The units are sent to North Carolina for editing, revision, and illustration at the program office, then returned to their authors in Africa for field-testing. Units are simultaneously tested in another country to gauge their broader applicability. Following second revisions based on the field-test data, the units are entered in catalogs and made available for distribution upon request.

The AHTIP library also includes *A Topical Outline for the Teaching of Family Health* (a guidebook for family health curriculum development) and several manuals for teachers, which, together with the self-instructional units, comprise a broad basic resource for the planning and implementation of family health teaching programs for medical students; for post-basic, basic, and enrolled level nursing and midwifery students; and for some levels of health technician and auxiliary students.

Distribution

A permanent center for the English-language publication and distribution of the AHTIP library has been established with the African Medical and Research Foundation in Nairobi, Kenya. The entire library has also been translated into French, and negotiations are in process to establish a similar system to serve Francophone Africa. A system for continually assessing the utility and periodically updating the content of the units is now being designed, and it is hoped that a review panel of African health educators will be named to perform this function.

Other AHTIP Efforts

The production and distribution of the AHTIP library is only one component of the program's broader effort to strengthen family health curricula and teaching capabilities. While the library is designed to be a free-standing resource, its impact is enhanced in those institutions which also undertake more comprehensive faculty and curriculum development programs. In Kenya, for example, the Ministry of Health has sponsored a series of workshops for faculty members in registered and enrolled-level nursing schools to assist in the implementation of the new national Community Health Nurse curriculum. The AHTIP has provided consultation and developmental materials in support of these workshops, which have helped to establish new educational programs and approaches in which the AHTIP library can be most effectively used.

In Sudan, the full utilization of the library of multidisciplinary teaching materials has been supported by workshops in which nursing, midwifery, and medical instructors have reviewed their common curricular interests and planned joint educational programs to introduce the team concept of family health care. Institutions affiliated with the AHTIP in other countries are following the same general approach of developing new family health teaching programs, for which the AHTIP library is a basic resource.

In the course of its programmatic history, the AHTIP has identified several program elements that may be key in the successful introduction of teaching materials for developing country health training institutions: 1) the selection of a format that is technologically and educationally appropriate and that addresses a range of instructional needs beyond the communication of new information; 2) the choice of the lowest effective technology level in the teaching medium, in order to assure the widest utility; 3) the recruitment of local faculty members as authors and reviewers; and 4) the provision of support for development of broader program contexts in which the new materials can be effectively used. ■

For more information, address the AHTIP, 406 University Square West, Chapel Hill, NC 27514, U.S.A.

James W. Lea is Director of the African Health Training Institutions Project.

A Communicator's Checklist

1 ***Communicating Family Planning to Rural Guatemala,*** by Jane T. Bertrand, Maria Antonieta Pineda, and Fidel Enrique Soto (Chicago, Illinois: Community and Family Study Center, University of Chicago, 1978), 103 pages.

The authors of *Communicating Family Planning to Rural Guatemala* have made a significant contribution to the professionalization of population communication research, an area that has too often been characterized by equating impact with volume of activity. At the same time, they have performed a service unusual among academics: they have reported the results of a valuable audience research study and, between the same covers, applied those findings in practical terms to the planning and implementation of a communication campaign.

In 1976 the Asociacion Pro-Bienestar de la Familia (APROFAM) was given responsibility for Guatemala's family planning information, education, and communications (IEC) program. Information about the family planning audience was scanty. APROFAM therefore conducted a survey to determine what percentage of the rural population, both indigenous and ladino, already knew about contraceptives, how favorable the people were, how many had already experimented with some contraceptive method, what their beliefs and reservations about contraceptives were—in short, how receptive the population would be to APROFAM's new activities in rural areas.

Roughly half (52.2 percent) of the 567 individuals interviewed were favorable to family planning, whereas 41.8 disapproved. When the sample was weighted to approximate the population as a whole, the percentage of those approving dropped to 44.1 percent, and those disapproving rose to 51.1 percent. Only 7 percent were actually using contraceptives. Projected to the general population, this dropped to 5.8 percent.

The authors identified ten social-psychological factors that tend to generate disapproval of family planning and to limit the actual use of contraception in Guatemala: 1) perceived disapproval of "significant others"; 2) lack of knowledge on the variety of contraceptive methods—the indigenous knew much less about family planning than did the ladinos; 3) insufficient husband-wife communication; 4) desire for a large family; 5) lack of informal communication on family planning; 6) lack of concern for pregnancy and its implications; 7) the importance of having a son; 8) religious and moral beliefs; 9) lack of awareness about the demographic problem; and 10) rumors and beliefs about contraceptive methods.

The researchers recognize an important reality that is often overlooked by communication planners: to direct the program to those *already favorable* to family planning, rather than to try to convert those who are not. This approach is consistent with volunteerism and with current communication theory, which holds that mass media are more effective in increasing knowledge and reinforcing existing attitudes than in bringing about a change in attitude.

Eight demographic and socioeconomic traits are identified as characterizing those favorable to family planning:

- *Ethnic group:* In this study, ladinos were more favorable to family planning than were indigenous people.
- *Sex:* Notwithstanding the prevailing stereotype that men in Latin America oppose family planning because of "machismo," this study suggests that men are, if anything, more favorable than women.
- *Age:* Younger respondents were not found to be any more favorable than those 25-34 years of age.
- *Marital status:* Unmarried people were more favorable than married people.
- *Religion and degree of religiousness:* As in the United States, Roman Catholics were no less likely than those of other or no religion to approve or to practice family planning.
- *Literacy:* Both favorable attitude toward and use of family planning were higher among those who could read.
- *School attendance:* Respondents who had the opportunity to attend school were more likely to approve family planning and to use contraceptives.
- *Types of housing:* Those in better housing were more favorable toward and more likely to be practicing family planning.
- *Nutrition:* Those who were better fed were both more favorable toward and more likely to be using family planning methods.

In determining the most effective means for communicating family planning information in rural Guatemala, the authors found that radio had the greatest coverage of all media, reaching 78 percent of all those interviewed; 65 percent actually own radios. Only 6 percent see television, buy a newspaper or magazine, or go to the movies at least once a week. The great majority of ladinos said they wanted more information on family planning, regardless of media. This was less true for the indigenous.

The final chapter describes the application of these research results to the APROFAM communication effort. The ten social-psychological variables were used to plan message content, the demographic characteristics to determine how the messages for the ladino and indigenous target audiences should differ, and the media data to determine program logistics. The program primarily used radio for family planning spot announcements in the rural areas, and television to reach the nation's opinion leaders in the urban areas. The follow-up evaluation of the program is in process, the results to be published later as a "final chapter" to this monograph.

The authors admit that some readers will ask, "What is new about this program?" They answer, "In the context of Guatemala, it is a new program."

"This represents the first attempt to reach both urban and rural populations with a variety of informational/motivational messages.

"The program recognizes the differences that exist between the ethnic groups, not only in terms of the media used but also in . . . the content of the communications.

"Among the indigenous, APROFAM is attempting to reach three distinct groups in their own dialect, with messages that have been pretested to assure that the translations are correct.

"Perhaps most important of all, this project represents an attempt to base decisions in regard to various aspects of the communication program on empirical realities, not untested assumptions, taking into account the concerns and interests of the target population."

Communicating Family Planning to Rural Guatemala is of value to anyone responsible for developing a campaign among rural people. It clearly explains the research needed to guide the action phases and effectively relates theory to practice. ■

Available in English and Spanish for U.S. $3.00 from the Community and Family Study Center, University of Chicago, 1411 E. 60th St., Chicago, Illinois 60637, U.S.A.

Reviewed by Robert P. Worrall, Acting President of The Population Reference Bureau.

2 ***Rural Radio: Programme Formats,*** by Kiranmani A. Dikshit, et al. (Paris, UNESCO, 1979), 94 pages.

Rural Radio: Programme Formats is the fifth in a series of UNESCO monographs on communication technology and utilization. Not a true monograph, the volume is a collection of surveys, each by a different author, of seven rural broadcasting programs in five developing and two industrialized countries. The authors all are or have been staff members of the organizations producing the programs.

The LDC programs represented include the following: rural broadcasts of the Agricultural Information Section of the Ministry of Agriculture, Nepal; *Farmers' Session* of the Rural Broadcasts Department of the

National Broadcasting Commission, Papua, New Guinea; Ghana Broadcasting Corporation's radio farm forums; *Cotabato Ngayon* of Radio Station DXMS in Mindanao, Philippines; and the responsible parenthood campaign of Accion Cultural Popular (ACPO), Colombia. Also presented are *Rural Broadcast* of Radio Czechoslovakia, and the Canadian Broadcasting Corporation's *Radio Noon.*

Each survey discusses the background and setting of the program, its rationale, the radio station and production facilities, field support organization (where applicable), evaluation and feedback, in addition to describing the program format itself. The descriptions provide interesting and even amusing insights into how different formats and styles, such as dramatizations, spot announcements, humor, and interviews, are adapted to specific cultural settings.

Rural Radio should find a sympathetic and appreciative audience among rural broadcasters, students of radio, writers, and agricultural field agents. Planners may find that it helps them understand some of the practical and creative considerations that bear on using mass media effectively. ■

Available for U.S. $3.50 from UNIPUB, Box 433, Murray Hill Station, New York, N.Y. 10016, U.S.A., or from UNESCO publications offices abroad.

Reviewed by Peter Boynton of the Academy for Educational Development.

3

Third World Women Speak Out, by Perdita Huston (New York: Praeger/ Overseas Development Council, 1979), 153 pages.

If one theme emerges from the interviews Huston records in *Third World Women Speak Out,* it is the women's almost fierce obsession with the need for education for both themselves and their children. Almost without exception the younger women Huston interviewed in Egypt, Kenya, Sudan, Tunisia, Sri Lanka, and Mexico are determined that their children will not be ignorant as they are, and, in many cases, that they themselves will eliminate their educational deficiencies and improve their life in the immediate future through nonformal education.

At times a generation gap is obvious, as the elderly grapple with the new philosophies propounded by the educated younger generation. In Kenya, for example, an elderly woman lamented the lack of respect of the educated younger generation for the older. In Tunisia, a young woman noted that the older generation is no longer welcome within the new nuclear family because "young couples want to live alone." Nonetheless, there is nearly unanimous agreement that education is necessary for survival.

Education for these women can mean different things, depending on their location, but it is almost always related to mastering skills and obtaining information that will enable them to improve their health and economic situation and educate their children—skills such as sewing, handicrafts, and improved agricultural and marketing techniques; information about nutrition, hygiene, health care, budgeting, and family planning.

The women in these vignettes tell their stories willingly and frankly, about repression by parents or husbands, beatings, poverty, and hardship on the one hand, and encouragement by progressive parents and husbands on the other. Their simple speech and unsophisticated manner often belie an acute awareness of economic and social problems that they might help solve if they had the necessary training.

The stories of the women's attempts at education, frequently told through interpreters, are moving. A semi-literate 25-year-old woman in a Tunisian training center, determined to learn to read despite her father's objection to education for women, had taken to peeling labels from the canned goods at the center in order to study them and improve her reading.

There are many more stories—about the Mexican woman who takes birth control pills secretly because she fears the reaction of her husband, who refuses to limit the family; the Sri Lankan woman whose tiny income goes for schoolbooks for her children; the young illiterate peasant woman in Kenya who despairs of ever being educated but longs to be a nurse. All of their stories point to the importance of women in the developing world and to the need to acknowledge their roles, provide training for them, and include them in decision processes at all levels. These women, Huston implies strongly, have been voiceless too long. ■

Available for U.S. $4.95 from the Overseas Development Council, 1717 Massachusetts Avenue, N.W., Washington, D. C. 20036, U.S.A.

Reviewed by Barbara O'Grady of the Academy for Educational Development.

4

Indonesian Maternal and Child Health Training Film. 16mm film, George Washington University Department of Medical and Public Affairs, 1978, 12 minutes, color.

This training film is a novel use of two kinds of film media, Super-8 and 16mm. Four short, color, Super-8 film cassettes have been produced in Indonesia on rehydration of the infant with diarrhea, care of a child with fever, supplemental feeding for the baby, and nutrition for pregnant women. Members of mothers' clubs view these silent, briefly subtitled films using a simple Super-8 viewer. The 16mm film, intended for the fieldworker, includes slightly longer treatments of each of the cassette subjects, along with information on how to use the cassettes and how to present the advice contained in them.

The method of presentation of these simple films, carefully planned to provide only the most essential message, clearly photographed, and reinforced through repetition, might be considered for adaptation to a variety of development education messages.

Readers are welcome to request information regarding the availability of this film from the Film Librarian, Information Services, George Washington University Department of Medical and Public Affairs, Airlie, Virginia 22186, U.S.A. ■

Reviewed by Judy Brace.

5

The Village Entrepreneur: Change Agents in India's Rural Development, by Wayne G. Broehl, Jr. (Cambridge, Massachusetts: Harvard University Press, 1978), 228 pages.

The Village Entrepreneur is a study of selected fertilizer distributors in Tamil Nadu, India, leading the author to a definition of the characteristics of the entrepreneur in a less developed country. The study fits into the literature on achievement motivation spearheaded by McClelland in the 1960s and the studies of "modernity," such as those of Inkeles, Rogers, and Shoemaker, in the late 1960s and early 1970s.

The author's conclusions support those of the earlier studies. The LDC entrepreneur is a person who enjoys a combination of certain attitudes, knowledge, and circumstances: access to information about resources and markets, ability to make short-range plans, appropriate "risk mentality," a practice of setting personal goals, a desire to maximize long-range profits, and a belief in the possibility of change.

Why should one read this book? Even though it is filled with intricate statistical analyses and detailed background information (including some apparent digressions), it is a thorough dissection of the interaction between individual behavior and economic opportunity in a rural area of a developing country. Particularly interesting to those working in nonformal education is the account of the training program in which the fertilizer distributors were introduced to entrepreneurial behaviors. A clear echo of what was written years ago by McClelland and his colleagues, the account achieves individuality by being woven into the elaborately described milieu of the whole study.

If nothing more, *The Village Entrepreneur* serves as a reminder to students of development of the difficulty of producing that "spark that brings . . . innovation to fruition." The study is a good microcosmic analysis of that spark. ■

Available for U.S. $18.50 from Harvard University Press, 79 Garden Street, Cambridge, Massachusetts 02138, U.S.A.

Reviewed by Jeanne Moulton, an educational advisor for the U.S. Agency for International Development.

INTERNATIONAL YEAR OF THE CHILD

"HEALTH MINUTES"

The Children's Television Workshop is in the final stages of producing a series of "Health Minutes" for television and radio in Latin America. The aim is to disseminate basic health information, particularly to help improve the health of lower-income segments of the population. The "Health Minutes" will consist of 50 one-minute messages for television, 25 of which will be adapted for radio as 30-second spots.

The messages, presented in Spanish and Portuguese, will cover five major subject areas: maternal and child care, communicable diseases, sanitation, accidents, and illness care. The content of the "Health Minutes" was established through discussion with health, education, and communications experts in Latin America and the United States.

The 50 messages will employ live-action film as well as animation, in the form of human-interest stories involving everyday activities. All writing, artwork, and filming has been done in Latin America by Latin American writers, artists, and filmmakers. A series of five booklets, similar in format and character to Latin American *fotonovelas*, is also being prepared. The booklets will cover the major subject areas and contain stories from the televised "Health Minutes."

The programs, underwritten by the Xerox Corporation, will be ready for broadcast during the latter part of 1979 and will be given gratis for broadcast for a five-year period. To date, eight Latin American countries have specifically declared a desire to use the "Health Minutes" on TV and radio.

The International Year of the Child organization has commended the "Health Minutes" to its National Commissions in Latin America as endeavors that "reflect the spirit of the IYC."

CHILD-to-child

The CHILD-to-child Program of the Institute of Child Health in London has produced a book of ideas on how children can help their younger brothers and sisters and their communities toward better health. Titled *CHILD-to-child*, it is addressed to the "adult teachers"—schoolteachers, health workers, parents—who can help "children teachers" develop simple and locally appropriate preventive and curative activities.

The book is organized around a series of steps, including finding out what the needs, problems, priorities, and resources are; talking over ways of meeting the problem; understanding other people's feelings and beliefs; designing appropriate activities; and improving programs through experience.

Using these steps as guides, *CHILD-to-child* suggests learning activities for children, such as making a health map of the community, doing a survey to collect community health information, playing a road safety game, making a "special" drink (a rehydration solution) for babies with diarrhea, recognizing danger signs in an illness, devising games to play with younger children, checking for malnutrition in young children using a "Shakir strip" *(see illustration)*, and making a brushing stick for cleaning teeth.

The suggestions are simply suggestions—a selection to choose from, to adapt to the situation, to use as starting points for developing new ideas. Taken together, they point up that we are all—including children—partners in development.

CHILD-to-child, edited by Audrey Aarons and Hugh Hawes, with Juliet Gayton (London: Macmillan, 1979), is available through booksellers or from the Institute of Child Health, 30 Guilford St., London SC1, U.K.

CHARTBOOK ON CHILDREN

"In 1975 there were just over 4 billion people in the world and 1.4 billion of them —36 percent—were children under age 15. By the year 2000, if current projections hold, there will be 1.9 billion children in the world—500 million more than in 1975." In observation of the International Year of the Child 1979, the Population Reference Bureau has published a book of two-color charts highlighting the contrasts between life for the fortunate one-fifth and life for the unfortunate four-fifths of the world's children.

Authors Magda Cordell McHale, John McHale, and Guy F. Streatfeild have put together 57 displays and tables depicting the numbers, proportions, and distribution of the world's children in 1975 and projected to the year 2000; their language groups and religious affiliations; their comparative situations in terms of health, disease, and life expectancy; access to health personnel and facilities; nutrition; access to satisfactory drinking water and hygienic waste disposal systems; access to resources for treatment of handicaps; education; and participation in the labor force.

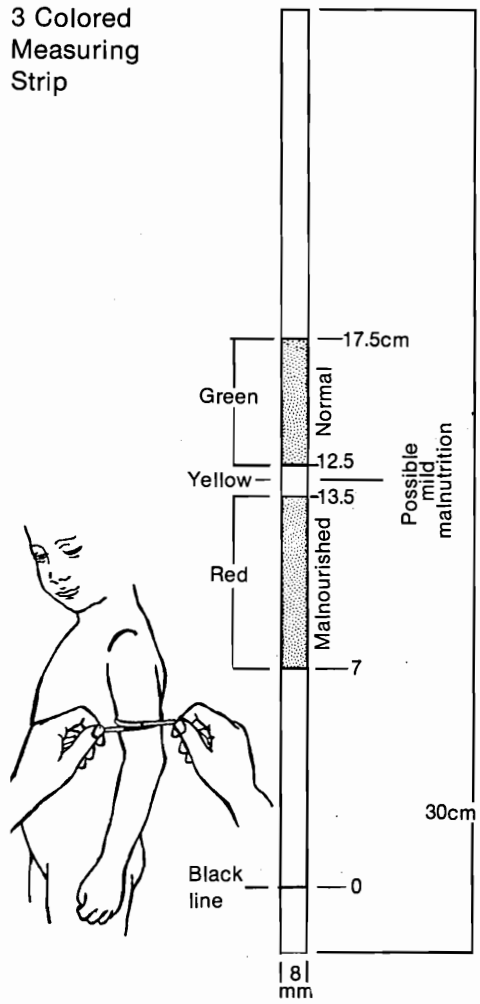
Single copies of the book, *Children in the World*, are available free of charge from the Population Reference Bureau, Inc., 1337 Connecticut Avenue, N.W., Washington, D.C. 20036, U.S.A. A set of six wall charts on children is also available at U.S. $1.50 for a set of six; notebook-size charts are U.S. $.35 per set, or U.S. $1.00 per set with a study guide.

THE "SHAKIR STRIP"

In surveying villages to assess the scale of the problems there, it is often a high priority to determine how many of the children are malnourished. A simple method is to measure the circumference of the child's upper arm. Arm circumference is almost the same for children between ages one and five, so the method described here works for children in that age group.

A measuring strip called the "Shakir strip" can be made cheaply from discarded X-ray film. The marks are scratched onto the emulsion side of the film, and the spaces between are colored as shown with spirit felt tip pens. (If these are not available, watercolor may be used on the emulsion side of the film but will wash off again if the strip gets wet. Ordinary inks do not work.)

To use the strip, place it around the upper



arm of the child, as shown, and read off the color opposite the black line. In the green section, the child is normal for the age; yellow indicates mild malnourishment, but without clinical signs; red (for danger) indicates severe malnourishment. Other clinical signs will be apparent in children of the latter group.

More details are available from Teaching Aids at Low Cost (TALC), ICH, 30 Guilford Street, London WC1N 1EH, U.K.

FILMS ON HEALTH CARE

A WAY TO BRIDGE THE DISTANCE

The role of communication media in support of health care is examined in a new film, "A Way to Bridge the Distance." Photographed on location around the world, the film explores four different strategies for delivery of critical health information at the village level. The approaches documented vary from nationwide campaigns using radio classes, study groups, and workbook guides, to programs linking isolated health workers with regional hospitals via two-way radio. One project tested the effectiveness of commercial advertising strategies in promoting better infant nutrition.

The communication projects explored in the film support larger rural health programs. After describing the projects—located in Guatemala, Tanzania, Alaska, and the Philippines—the film summarizes elements of successful communication planning.

"A Way to Bridge the Distance," a 23-minute, 16mm color film, was produced for the U.S. Agency for International Development and is available through the Clearinghouse on Development Communication.

IMMUNIZE AND PROTECT YOUR CHILD

One of a series of nonverbal animated cartoon films sponsored by WHO, "Immunize and Protect Your Child" was developed to motivate mothers in developing countries to bring their infants to the local health center for a series of vaccinations. The film attempts to accomplish this objective without the use of words, either spoken or written, hoping that the film can be used without regard to linguistic or cultural boundaries.

The five-minute, 16mm color film, produced by Zagreb Film of Yugoslavia in 1977, is available from INF/FTV, World Health Organization, Avenue Appia, 1211 Geneva 27, Switzerland, and from Spears Associates, P.O. Box 1207, Arlington, Virginia 22210, U.S.A.

HEALTH CARE BY THE PEOPLE

This 28-minute color film describes the villager-run Project Piaxtla primary health care program in Mexico, described on page 5 of this issue. It is available for purchase (U.S. $350.00) or rental (U.S. $35.00), in English or Spanish, from The Hesperian Foundation, Box 1692, Palo Alto, California 94302, U.S.A.

THAT OUR CHILDREN WILL NOT DIE

Child mortality rates in West Africa are among the highest in the world. In Nigeria, the Institute of Child Health (ICH) of the University of Lagos estimates that in some parts of the country, half of the children born die before the age of five. ICH is convinced that there are faster and less costly ways to deliver health care to mothers and children than waiting for doctors to be trained and hospitals built.

The ICH approach is to help communities develop local health clinics that are run by nurses trained for expanded roles in both preventive and curative care. The nurses are assisted by specially trained community residents who also regularly visit clinic patients in their homes. "That Our Children Will Not Die" shows the ICH concept at work in five locations in Nigeria. (See also page 3.)

The 60-minute, 16mm color film is available for sale at U.S. $600 and for rental at U.S. $50.00; videocassette, U.S. $425.00. For information contact the Ford Foundation, Office of Reports, 320 East 43 St., New York, New York 10017, U.S.A. ■

Health Care—A Selected Bibliography

American Public Health Association. *The State of the Art of Delivering Low Cost Health Services in Developing Countries: A Summary Study of 180 Health Projects.* 1977. Available from APHA, 1015-18th St., N.W., Washington, D.C. 20036, U.S.A.

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Hall, Budd L. *Mtu ni Afya: Tanzania's Health Campaign.* Clearinghouse on Development Communication. 1978. Available from the Clearinghouse.

King, Maurice; King, Felicity; & Martodipoero, S. *Primary Child Care: A Manual for Health Workers.* 1978. English edition available from Oxford University Press, Walton St., Oxford 0X2 6DP, U.K. Information on other editions available from WHO, Distribution and Sales Service, 1211 Geneva 27, Switzerland.

Low-cost Rural Health Care and Health Manpower Training: An Annotated Bibliography with Special Emphasis on Developing Countries. 4 volumes (1975, 1976, 1977, 1979). International Development Research Centre. Available from UNIPUB or from IDRC, Communications Division, P.O. Box 8500, Ottawa, Canada K1G 3H9.

The Manual of the Barefoot Doctor. An English translation of the manual used in Hunan Province, People's Republic of China. 1975. Available from the Superintendent of Documents, U.S. Government Printing Office, Washington, D.C. 20402, U.S.A. Order No. DHEW(NIH) 75-695.

Non-Formal Education Information Center. "A Bibliography of Non-Formal Education on Health and Nutrition." Annotated. 1977. Available from NFE, Institute for International Studies in Education, Michigan State University, East Lansing, Michigan 48824, U.S.A.

Rural Health Series: For Medical Assistants and Other Rural Health Workers. Published by the African Medical and Research Foundation. Volumes in the series to date include *Child Health* (1975), *Diagnostic Pathways in Clinical Medicine* (1976), *Health Education* (1976), *Obstetric Emergencies, Pharmacology and Therapeutics, Mental Health, Communicable Diseases* (1978), and *The Hand: Infections and Soft Tissue Injuries* (1979). Available from AMREF, P.O. Box 30125, Nairobi, Kenya.

Salubritas—A quarterly newsletter dedicated to improving communications among field health workers concerned with the delivery of low-cost health services in developing countries. Available in English, French, and Spanish from APHA.

Storms, Doris M. *Design and Management of Auxiliary-Based Health Programs: Lessons from Developing Countries.* For information on availability contact the Department of International Health, The Johns Hopkins University, 615 N. Wolfe St., Baltimore, Maryland 21205, U.S.A.

World Health Organization. *Primary Health Care.* Report of the International Conference on Primary Health Care, Alma-Ata, USSR, 6-12 September 1978. Available from WHO.

(Continued from page 16)

operators. Most development projects are sponsored jointly by national governments and international development agencies, and technicians' salaries in the national organizations are usually modest. Trained technicians in government organizations are soon snapped up by private organizations prepared to pay higher wages. No sooner have they been trained to a reasonable level of competence than they are offered richer rewards elsewhere.

Supplies of Spare Parts and Consumable Items: Equipment salesmen from the leading audiovisual and electronics manufacturers have penetrated into the interior of the developing world, but their spare parts brethren are somewhat slower to arrive. In industrialized societies we are accustomed to walking into a store and buying film or audiocassettes of the correct size and technical specification, and we have convenient processing facilities, either through the store or via the mails. Rural shopkeepers in Bangladesh or Bolivia are not connected to photo-processing agencies, and mail service may be infrequent and unreliable.

Maintenance Budgets: An adequate 35mm camera for field use by a rural development worker may cost a development agency several hundred U.S. dollars — a relatively trivial item in an international agency aid budget. But when the expatriate aid officials pack their bags and leave the project in the hands of national development workers, the relative values and costs of equipment and parts change radically. To a development worker in a non-industrial society, a blank cassette may represent the price of food for his whole family for several days. In other words, decisions made by planners in rich countries may place real financial burdens on professional workers in poor ones.

The message is that before we get carried away with plans to introduce solar-powered transceivers in remote areas, equip extension personnel with mobile projection units, or provide field staff with 35mm cameras and synchronized tape players and projectors, we should think of the implications. Otherwise, the global villages may soon be strewn with admired but useless artifacts from the industrial world. ■

(Continued from page 7)

tion in the schools "until community members know enough about their own health to improve the general health of a rural area." Thus, "the ultimate goals of primary care delivery programs are achieved by delivering appropriate health-related services in a manner acceptable to a community and based on equitable distribution of such services among the people." ■

Copies of Manpower and Primary Health Care *are available for U.S. $10.00 from the University Press of Hawaii, 2840 Kolowalu Street, Honolulu, Hawaii 96822, U.S.A.*

— S.L.

Development Aids or Global Village Artifacts?

a-v equipment and rural development

The following article, while not a Dilemma *in* DCR's *usual pattern, highlights many of the problems common in rural development projects using sophisticated audiovisual equipment. The observations are offered by H. Stuart Hawkins, senior lecturer in agricultural extension at the School of Agriculture and Forestry, University of Melbourne, Australia.*

Dilemmas in Country X: Candid discussions about failures *will be featured again in the next issue. The editor invites readers to submit reports for this column. Authors' names, as well as those of the people, agencies, and countries involved in the projects, will be withheld upon request.*

The village people were gathered near the *bale banjar,* or meeting place, in the village of Umasalakan in Bali, Indonesia, awaiting the start of the evening's activities. A group of rural development workers from Udayana University had come for a film-and-discussion evening to promote the use of crossbred chickens. The hum of excitement increased as the portable generator was started. A bright white light hit the screen—no film, no sound, just white light. All we heard from the crowd was an excited murmur of "*beh, beh*"—"gee whiz" in the local language.

The point is that films and electric light are rare in parts of Bali. Those of us from industrialized nations have grown up with both and take them for granted. While familiarity may not breed contempt for media, it does make us prone to dangerous assumptions about the use of electronic audiovisual equipment in promoting rural development.

Marshall McLuhan has fascinated us with his concept of the global village. He has not, however, turned his attention to the problems that occur when there is no global village smithy to mend the malfunctioning medium, nor has he told us much about the global village schoolteacher who will help us learn to use the medium effectively. He has not spelled out the importance of the global village shopkeeper, who stocks spare parts for broken or worn media equipment. He never mentions the global village moneylender, who will be called upon to finance the purchase of these machines when the global development specialist returns to his urban office or when the development grant runs out.

Many of us who work with rural development communication have been seduced by electronic wizardry and mechanized magic to the extent that we regard equipment as the panacea for peasant problems. Backpack video equipment, audio- and videocassette recorders, 35mm SLR cameras with automatic exposure adjustment, cartridge-loading slide projectors with electronic controls—these are the tools of the trade of modern rural communication workers in industrial and non-industrial nations alike.

The fact is that many of these tools lie unused in cupboards because people do not know how to use them properly. Some rot in storerooms, unusable because of inadequate moisture-proofing against the fungal attack so common in the tropics but relatively unknown to audiovisual workers from more temperate climates. Others remain in pieces in the repairman's shop because a key part is not available locally. Still others have been put away until film, tape, or lamp can be afforded.

Shiny gear enchants people, especially those who do not have it. It impresses development planners, and it lends prestige to people or organizations that possess it, even if it produces little. In an effort to break that spell, the following points regarding the extensive use of sophisticated audiovisual equipment in rural development projects are offered for consideration:

Training of Personnel: Cameras, projectors, videocassette recorders, and the like are wasted unless the people who are to use them know *how* to use them. The point seems elementary, but a surprising number of rural development workers I have met in South America and Southeast Asia have little practical knowledge of audiovisual media use, even when equipment in sound working order is available. Simple equipment training programs should be built into all development communication projects.

Equipment Maintenance: Trained technicians are in even shorter supply in many developing countries than are trained media

(Continued on page 15)

in this issue . . .

Development Communication Report

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Intermediate Technologies Promote Participation

by Richmond Postgate, Peter M. Lewis, and William Southwood

Industrialized nations engaged in development efforts in the Third World have often tried to replicate designs overseas that have proved workable at home. This approach has resulted in many a disastrous failure in fields mistakenly thought to be independent of culture. (The introduction of fertilizers and the mechanized farming of the Green Revolution offer many well-documented examples.) Such an approach is even less likely to succeed when applied to communications. Copying without redesign has been an endemic failing in communications, especially in transfer from industrialized to Third World countries. Communication systems are not like artifacts or even manufacturing systems. They cannot be reproduced without regard to the contextual factors that gave rise to them. Possibly more than any other single introduced technology, communications is affected by—and indeed often determines—the economic base, the class interests of senders and recipients, and the political, religious, and social superstructure of the societies onto which it is grafted.

Communication, if it is anything, is about and between human beings. However, it is precisely the human element that is so often lacking in large communication systems in the West, as well as in the technology developed to create and satisfy international markets. The communications needs of Third World countries cannot be met by national broadcasting or other large-scale media alone. Political and educational development need communications support that will arouse response and action at the local level, by groups and individuals. For this, the wide area transmissions characteristic of a national broadcasting system are unsuitable and need to be complemented by small systems that take into account different requirements and interests—climate, language, culture, and environment.

In 1978 the authors set out to conduct a study of small-scale, low cost, participatory communication systems that use technologies suited to the needs and context. Their work was commissioned by UNESCO's Division of Methods, Materials, Structures, and Techniques, and jointly funded by UNESCO and the Intermediate Technology Industrial Services unit of the Intermediate Technology Development Group. Their objective, in addition to reviewing low-cost communication systems and equipment, was to present case studies of existing small-scale communications projects in a number of countries. Their report, *Low Cost Communication Systems for Educational and Development Purposes in Third World Countries*, was published in April 1979.

There Are No Models

Originally the authors used the word "models" to describe what they were looking for. However, they ultimately had to underscore Budd Hall's statement, made in reference to the Tanzanian *Mtu ni Afya* campaign, that "there are no models." Instead, having sent questionnaires to 180 sources, they selected from the information they gathered 15 "instances" or examples for inclusion in the study. The instances were chosen not to serve as models but to give a broad picture, suggest a range of possibilities, and serve as starting points for new local initiatives.

The criteria applied to the selection of each instance were:

- **Local:** Is it *physically possible* for people on the spot, both manufacturers and users, to share in the processes of planning, execution, use, and criticism?
- **Participatory:** Is a degree of participation *designed into* the system at the planning, decision-making, and production levels?

(Continued on page 2)

Folk Theater: One-way or Two-way Communication?

by Ross Kidd

Theater is currently attracting a lot of attention as a vehicle for nonformal education in the Third World. "Folk theater" or "folk media" are seen as an interpersonal communication channel, bridging the gap between the individual learners and the modern impersonal mass media.

Theater can be an effective tool for nonformal education. As entertainment it can engage and hold the interest of large numbers of people, many of whom have been alienated by traditional approaches to adult education and development. As an oral medium in local languages it can involve many people who are left out of development activities because of their illiteracy or lack of understanding of the official national language. As a means of cultural expression of which everyone in the community is capable it can be kept within the control and use of the local people. As a public or social activity it brings a community together and creates the context for cooperative thinking and action.

In spite of its popularity—or perhaps because of it—it is necessary to re-examine critically the use of theater in nonformal education. Folk media or theater is promoted as a more persuasive means than modern media for putting across development messages. But whom are we persuading? About what messages? And in whose interests?

Popular theater must be seen as more than simply a persuasive technique. Popular theater programs attract large audiences by using techniques and cultural symbols that people understand. But the techniques cannot be separated from the content or purpose of the program, nor from the social and educational context in which theater is

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Intermediate Technologies

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- **Appropriate:** Are the installations, equipment, and organization appropriate to the human skills available and to the activities to be undertaken?

The instances were chosen both from Third World countries—Afghanistan, Bolivia, Botswana, India (three separate instances), and Peru (two instances)—and from the more industrialized ones—Australia, Canada, Ireland, Italy, Britain, United States, and Yugoslavia (two instances). The objectives of the instances ranged from improving rural skills, to promoting small town community involvement, to communications for residents of a new city suburb and for excluded urban groups. The media used in the various instances included local broadcast radio, television and satellite, audiocassette, video, audiovisual aids, and popular theater. By taking these examples and documenting them as fully as the available information permitted, the authors hoped to provoke a specific reaction: "Our situation is not unlike some of these; let's find out more and design our own system."

What Is Appropriate?

The original inspiration for the study was Fritz Schumacher's book, *Small Is Beautiful.* The popular catch phrase has often been unthinkingly used, as if small were beautiful at all times and everywhere. Schumacher's contention that "appropriate is a question" helps to set the concept apart from the absolutes that generally surround technical solutions to human problems.

Although what is appropriate in one context may be totally inappropriate in another, every communications project stands a better chance of success if it grows out of a knowledge of available alternatives. The task of a potential user of communication techniques is formidable if he or she does not have knowledge of and access to the technologies and methods largely developed in the industrialized countries and adapted, often successfully, for the Third World by Third World practitioners. Of course, the political will of the participants and a degree of support (or at least passive acceptance) from those with the political clout are necessary to the success of any communications scheme. But even when these coincide, the knowledge of the black boxes available, of their cost, of their reliability, and of the means of hanging them together is seldom available to the barefoot communicator.

An attempt has been made to narrow these gaps in an analytical section of the report under the broad heading of "technology." Another section documents the data collected from the experiences of all who answered the questionnaire.

Toward Relevant Standards

One conclusion of the study is that it is sensible to specify standards of communication equipment only with reference to the message the communication channel is expected to carry. For example, the standard required in educating and training participants and producers for a local village's videotaped performance is very different from that applicable to a national television broadcast. The former will invoke far more participation from an audience familiar with the actors, and will convey an immediacy that outweighs its lack of polish. There is *no* standard by which to compare such diverse objectives, and any technical or production criteria must be seen as a diversion of attention from the real merit of the final product.

Once this is accepted, it is easy to avoid the apparent trap of viewing all but the most modern technology as second-rate. Not that this tyrannical approach evolved in the Third World; it was exported along with other trappings of colonialism and neocolonialism as *the* path to development through emulation. In the process, many truly appropriate ideas have certainly been hijacked, many able communicators brainwashed into a blind rejection of any program or piece of equipment that did not meet the standards of the metropole.

With this in mind, the experiences of community radio, pirate radio, and small-scale local radio of the West provide valuable hints of possible communications alternatives. The standards for much consumer audio equipment are now as high as for broadcast systems, and, in some countries (Italy being the prime example), branches of the electronics industry deal solely with equipment for this type of service. The consumer boom, and the production and marketing of the Japanese and Western firms that initiated it, have had far reaching spin-offs in the Third World.

A good example of this is the audiocassette. Simple enough for almost anybody to operate after a few minutes of instruction, universal in its application, standardized throughout the world, reliable, and relatively inexpensive, cassettes are a feature of many of the projects reported. Despite standards falling well below what would be acceptable to most Western administrations, its use in rural education programs, as a source of input to local or regional broadcasting, or as a means of having the voice of a community heard, is well documented. Clearly the criterion that it sounds good enough to convey the message is more important than its failure to meet specifications for wow and flutter.

People and Participation

Another conclusion of the study is that the effectiveness of small-scale systems results largely from the energies released when small teams share roles and tasks among themselves and with volunteers. Some of the instances show the excitement of producers and technologists freed from strict division of labor: "Everyone wanted the day to be 48 hours long."

However, participation that is confined to communications and not extended to other aspects of social and political life is artificial. The participants themselves may indeed be benefiting, but absorbed in the operation of the communication system, they may well be diverting their energies from more pressing problems or more productive channels. A prior condition for introduction of a participatory system is the willingness of the ruling class to accept the consequences of the changes that such an enterprise is likely to bring about. If there is a desire for change at the base, and no willingness on the part of the authorities to allow it, frustration may manifest itself in cynicism or overt political action, or it may lead to an acceptance that one must work within the "political space" available.

Several instances of participation at the production, decision-making, and planning levels were identified, although in some cases the professionals tended to dictate both what should be communicated and how. Involvement of farmers in rural development programs and democratic control of Italian urban VHF stations were among the positive examples reported.

Selection and training of participants are two areas in which a need to depart from time-honored approaches is apparent. In Peru, communications graduates were found to be less suited to small-scale work than the "natural communicators" found within the group being served by the communications. The graduates emerge "wanting to give *their* message to the world, not to serve as a link." In the Peru project, however, project administrators found it difficult to recruit *campesinos,* as they discovered that "extracting people from their environment and giving them training results in displacement." This did not seem to be an issue in Bolivia, where an apparently more successful (and much smaller scale) project is using ex-*campesinos* for production of radio programs.

Manufacture

One criterion for appropriateness should be the ease with which a society can become independent of imported materials, methods, or ideas. However, the gap between the industrialized "haves" and the Third World "have nots" is nowhere greater than in communication technology produc-

tion. The very nature of transistorized electrical and electro-mechanical equipment such as cassette recorders means that huge economies of scale can be realized. While it is possible to construct a radio receiver from a tin can and a piece of washed coke, it is *not possible* to manufacture a transistor in the kind of workshop environment used to produce even such a relatively complex piece of equipment as a hydroelectric generator. So the very small number of instances of local manufacture associated with small-scale communications was not really surprising: simple and reliable imported equipment is simply taken for granted in most cases.

The equipment availability factor, which more than any other has released communications from the grip of the professionals and technocrats, produces an ironic contradiction: any equipment manufactured "locally" is bound to be less reliable, probably more expensive, and less convenient to use than imports, thus sabotaging the advantages in terms of local participation attainable through local program production.

One of the few instances of local manufacture reported was the assembly of a VHF-FM receiver from imported components. The units, designed to be worn on the arm, were in prototype production at the University of Pune, India. The factory is operated by a consortium of businessmen using the labor of students in the physics department, and has for some years been producing educational materials. The new venture is planned as part of a wider extension campaign, and it is anticipated that the receiver will make it easier for rural workers to listen to programs while going about their daily tasks. Others, however, have found that they cannot successfully compete with products imported from overseas, and many ventures have failed through unreliable supply, lack of market outlets, or difficulties in production itself.

Where to Now?

The conclusions to be drawn from such a limited study must necessarily be tentative. The information received and the enthusiastic responses from those providing it are clear evidence that small-scale communication systems have a part to play in any program of education, economic development, or political change. In many cases such systems may succeed where large-scale ones prove to be unsuitable.

These points are neither widely known nor widely accepted. The reasons are complex and include the unwillingness of governments to devolve central power, the prestige of the high technology solution, the profit to be made by manufacturing companies from replicating Western technology for the Third World, and the absence of an organized collective market demand from the Third World. A further result, which is in itself a cause, is the neglect of small systems as an integral part of international aid packages.

The most important and clearest conclusion to be drawn is that small-scale systems can and do work. They work where a genuine desire for them arises within the country concerned, and where the relevant authorities are prepared to give continuing support. They do not work when artificially grafted on from an alien source. Most important, they succeed in direct proportion to the participation of the producers and audience at every stage. ■

This article is based on a 75,000-word report, Low Cost Communication Systems for Educational and Development Purposes in Third World Countries, *available from the Methods, Materials, Structures and Techniques Division of UNESCO, 7 place de Fontenoy, 75700 Paris, France.*

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Solar Energy Powers Two-way Radios

A recent report prepared for AID, OECD, and IBRD investigated the possible relevance of appropriate technology (AT) developments in the United States to Third World development. The report noted that the most innovative AT practitioners in the U.S. have historically been detached, usually quite deliberately and for ideological reasons, from traditional government and institutional funding sources, and have not had the resources to maintain overseas connections. Still, there have been some examples of successful collaboration between grassroots AT developers in the U.S. and the Third World. The article that follows describes one such effort.*

by Jerry Miller and Albert Houston

In February of 1976 a major earthquake devastated Guatemala, killing more than 22,000 people and leveling adobe houses and buildings across the country. Among the organizations that responded to that disaster was Plenty, a non-governmental charitable relief and development organization with headquarters at The Farm in Summertown, Tennessee.

The first Plenty volunteers to arrive on the scene found that, with telephone lines down, there was an urgent need for communications assistance. A call went back to Plenty's headquarters for technicians to set up an emergency communication system. The two-way radio system they initiated then is still in place, in use, and saving lives, owing largely to Plenty's original determination that the technology they introduced must be adapted to, compatible with, and maintainable by the local people.

Plenty worked in two main target areas in Guatemala. The first was a series of villages with a population of approximately 100,000, stretched around a large lake surrounded by three volcanoes. A rough road, passable only by four-wheel-drive vehicles, extended three-quarters of the way around the lake; some villages were accessible only by boat. The second target area was a string of villages of some 40,000 people, separated by several thousand feet in altitude. The uppermost village sat at a 30-degree slant on the side of a volcano. One bus per day passed by this village.

In both areas Plenty installed two-way radio systems connecting relief team ambulances, local health workers, hospitals, clinics, and fire-emergency units in the larger towns. The lake system had 12 stations in its system, the mountain system had 14. In many instances the radio was installed in the bamboo or adobe dwelling of the local health worker. In most villages, the two-way radio stations were the only communications link the village had with the outside world; telephone and telegraph services are not likely to extend to many of the smallest villages for years to come.

A car battery, used to power the radio, was placed near the station, with a fused line connecting the two. The wires were color-coded to ensure proper reconnection should a health worker or technician need to reconnect the battery. Extra fuses were left at each site in case of a temporary short circuit. The batteries would provide power for one and one-half to two months without being recharged. Periodically, the system technician would bring a hot battery replacement.

**The Relevance of AT Developments in the U.S. to the Third World: A Compendium of U.S. AT Organizations,* edited by Frederick W. Smith, and based on reports by William N. Ellis, George McRobie, and Kenneth Darrow, Spring 1979. For information on availability, contact the Office of Science and Technology, USAID, Washington, D.C. 20520, U.S.A.

An antenna was installed outside of the station on a tall pole. Guy lines were secured, lightning ground rods pounded in at the base of the pole, and cable connected to the radio. Each station, constructed by two-person teams, in many cases with the help of local villagers, could be easily installed in one day. Solid communications of from 15 to 30 miles were achieved by the system, depending on the location.

Although this was a very low-maintenance system that could last up to 20 years, it did require the training of local technicians. Plenty conducted a three-month training course and awarded volt-ohm meters, antenna-power meters, and tool kits to the most promising students. These indigenous technicians were quick to learn the technology, once they had access to the tools and training. They were also indispensable to the ongoing functioning of the system.

The radio system devised for Guatemala is built in modules to facilitate rapid repair in the field. The Plenty staff supplied the system technicians with spare parts and taught them how to isolate which part of the system was malfunctioning and how to replace it. Damaged modules were to be taken to a central shop for repair.

The Plenty system designers made every effort to safeguard the system and to prevent deterioration of the equipment due to environmental factors such as rain, heat, and high velocity wind. Exposed microphone cables, batteries, and speakers were bolted down. Plenty learned that, if speed of installation is important, all equipment should be procured, preassembled, and modified in advance for the location in which it is to be used. Necessary modifications might include water seals and cast housing for waterproofing, insulation, replacing external microphone cables with push-to-talk bars, and provision for bolting the equipment down. Plenty feels that local manufacture of equipment components would probably be possible only for large-scale, nationwide systems with production of at least ten thousand stations.

Another modification—one that could have major implications—is the use of a relatively inexpensive solar panel (U.S. $200 per station) to replace the battery power system. These panels, which have been tested in a variety of communication applications, require almost no maintenance, and would eliminate the need for battery servicing. A trickle charge of just over half an amp is more than sufficient to keep the five-watt transceivers operating. The minimum cost for a basic solar-powered two-way radio station is U.S. $500, plus installation costs. Modifications for extremely harsh environments can push the cost up to $1,000. A battery-powered station would be approximately $200 less in total costs. Plenty is continuing to experiment with the solar component of the system and hopes to make it affordable for widespread use in the Third World.

Plenty learned from its experience in Guatemala that the long-term survival of a communication system depends on its use. The use of the system for medical and emergency situations, and its placement in clinics, hospitals, fire stations, the homes of health workers, and emergency vehicles, made it acceptable to officials and citizens alike. The villagers learned quickly that the system provided the possibility of fast help in an emergency and access to the advice of a doctor. With health and medical advice brought into the village by the radio, the number of emergencies that had to be transported to clinics and hospitals decreased markedly.

Plenty's activities are not limited to communication systems. Plenty also runs an agricultural project in Guatemala that is attempting to introduce soybeans into the native diet. Plenty volunteers have been teaching the people of the highlands how to make soymilk and tofu, and have screened some 20 varieties of soybeans to determine which ones would grow best in that locale. They are in the process of setting up a soy dairy.

In addition to working with soybeans, the agricultural project has been conducting research on other high-protein crops such as grain amaranth, quinoa, and wing beans. Amaranth was a major crop of Guatemala before the Spanish conquest but its use was interdicted by the conquerors, and the ancient varieties of amaranth are now in danger of extinction. Plenty is attempting to reintroduce this native crop, blending what is known through modern empirical agriculture with the agricultural wisdom of the agrarian Guatemalans.

Plenty also conducts Village Technology training programs for many Third World trainees. In addition to radio communications and electronics, the program includes training in nutrition and soy production, agriculture, mechanics, village construction, solar heat and water systems, primary health care training, and midwifery.

Plenty is convinced that low cost, two-way radio communication systems are a viable alternative to expensive telephone and power installations for thousands of villages around the world, particularly when powered by solar panels. As a result of their experience in Guatemala, two of Plenty's original technicians were recently engaged as consultants by the World Bank to conduct a feasibility study in Bangladesh on the use of two-way radio for rural health communication. This radio network would be used to connect medically trained women in local villages to regional clinics and doctors. The proposed pilot system is a 60-station, solar-powered system that will cover three districts, an area containing over one million people. In Bangladesh, as in Guatemala, Plenty would work closely with the local people to gain authentic knowledge of the cultural dimensions of their community, hoping to provide an atmosphere conducive to the design and implementation of a truly appropriate communication technology. ■

For information on solar communication systems, contact Jerry Miller, Solar Electronics, The Farm, 156 Drakes La[illegible] Summertown, Tennessee 38483, U.S.[illegible]

Jerry Miller and Albert Houston are Plenty technicians who were involved in both the Guatemala and Bangladesh projects.

Folk Theater

(Continued from page 1)

used. It is the latter that determine whether the program is serving the interests of elite groups or those of the oppressed. Theater as a pure technique is neutral—it can be used for domestication or for liberation. But once it is applied to a social or educational context, it is no longer neutral. It functions—consciously or unconsciously—as a means to persuade people to accept their situation or as a device for challenging them to become engaged in changing it.

In looking at the various ways popular theater has been used for nonformal education in Africa, it is important to consider the following issues:

- Whose side is the program on—the elites or the oppressed?
- Who sets the goals and controls the program?
- What are the underlying assumptions on which the program is based?
- What is the educational method involved in the program—a form of "banking" or authentic dialogue?
- What is the effect of the program—conditioning people to accept their situation (domestication) or challenging them to "deal critically and creatively with reality and discover how to participate in the transformation of their world"* (liberation)?

Theater and Information Campaigns

One of the earliest uses of theater in Africa as a means of nonformal education was in the Ghanaian mobile information campaigns, mounted by the colonial government after the Second World War as a major part of their mass education program. Interagency teams of field workers traveled from village to village, organizing programs of drama, discussion, and demonstration. The technical departments—agriculture and health—chose and shaped the messages; the community development department provided the team leadership and skills in mass extension work.

The program operated in one-way banking fashion, with the organizers imposing their views of what the people need. The underlying assumption behind this program is characteristic of much development work: the view that development problems can be overcome simply by modifying the behavior of the poor, by giving them the knowledge development agencies feel they need.

This development strategy is based on a deprivation view of disadvantage: that poverty is self-inflicted, that the poor are poor because they have certain deficiencies or inadequacies. The strategy then is to teach the poor new skills. The purpose is to give information rather than to develop critical awareness, challenge vested interests, or generate commitment for collective action. The social problems that condition their oppression need not be altered; only the oppressed need to change. Thus the interests of the dominant class are secured.

It is, of course, important to treat symptoms as well as to attack basic causes, but the basic causes are much more crucial. The health of the people is far more influenced by politics and power groups, by distribution of land and wealth, than it is by treatment or prevention of disease. The key constraint to progressive social change is not lack of skills and information about farming, nutrition, family planning, health, etc. It is structural inequity: inequity of wealth, of government services, of educational and employment opportunities, of wages, of power, and of basic human rights. This inequity undermines the capacity and confidence of the poor to control their lives; it conditions them to accommodate themselves to the norms of the dominant groups rather than to struggle against them. As a result, the dominant groups assume an increasingly paternalistic stand, under which the rural poor become the politically voiceless recipients of the ideas of the dominant classes and of further exploitation.

The irony is that folk theater is publicized as a bottom-up alternative to the mass media, and yet it is used just like the mass media, with centralized production of messages and limited local participation and dialogue. The theater forms do "humanize" technical messages by putting them in the context of everyday family and community life, but the imposition of centrally determined information and the lack of engagement in critical analysis and collective action produce more passivity and dependence and a feeling of technical and cultural inferiority. Even though popular theater in this case has a progressive image, its effect is one of social control and domestication.

Theater as a Two-way Process

Over the last several years there has been an increasing use of theater as part of a two-way communication process in which performance is the catalyst for discussion. The media do not prescribe the solution; their job is to present the problems in a way that challenges people to take a fresh look at them and try to do something about them. The spectator is no longer a passive recipient of government messages; he is provoked by the performance and the educational program to respond in an active way.

One of the first experiments of this kind was started by a group of adult educators and extension workers in northern Botswana in 1974. They realized that they could make very little impact on agriculture or health or community development without starting to analyze the larger social forces controlling their situation. They found it more and more difficult to accept the elitist nature of their work, and recognized that real solutions required the mobilization and active participation of the whole community.

Socio-drama mixed with discussion and collective action seemed to provide the beginnings of an answer. Its liveliness attracted people and held their attention, and this made it possible for other things to happen. It provided a means for expression of feelings and analysis about major problems in the community. It also produced a mirror of the community as the focus for discussion and a stimulus to take a more critical look at the situation.

The popular theater program initiated by this group has become an annual festival, called Laedza Batanani. Each year all of the community leaders and extension workers in the area come together in a workshop to plan the festival and choose the issues they will address. Then a smaller group is selected to prepare a performance of drama, puppetry, dances, and songs, and to take this on tour through the five major villages in the area. After each performance the actors and other local extension workers divide the audience into groups and organize discussion of the problems presented. In a report-back session the chairperson tries to get agreement on decisions for action. Then it is up to the extension workers to provide the organizational support and technical information for any follow-up action.

The involvement of local performers—extension workers and community leaders—ensures that there is a better chance of discussion and follow-up. This is not an outside group putting on a performance and then leaving the community. The performers live in the area, understand and identify with the issues, and therefore take an interest in stimulating and supporting positive results from the festival.

The community workshop that is used to plan the festival has two important effects. It provides a clear mandate from the community on the priority problems they want to focus their energy on during the festival and for the balance of the year. This in turn produces a common focus for the various extension agencies as the basis for joint action—a major step forward in the coordination and integration of extension work in the area.

Results of the Botswana Program

Over time, the popular theater program in Botswana has become increasingly committed to liberation. Whereas in the begin-

*Paulo Freire, *Pedagogy of the Oppressed*. New York: Herder and Herder, 1972, p. 15.

ning it was uncritical about its allegiances and the nature of class divisions, issues are now more carefully selected to represent the concerns of the rural poor, and a much clearer critical perspective is applied. In this case, critical analysis involves looking beneath the apparent causes for the real constraints that condition the life of the poor. For example, the agricultural slogan, "plow early," has been examined in terms of the interests it is meant to serve. In the case of poor families who have no livestock, this slogan victimizes them, makes them feel inadequate in a situation where they need to work for richer cattle-owners for a few months in order to borrow oxen, by which time it is too late to get the full advantage of the rains.

The critical perspective in the drama challenges people to evaluate the forces conditioning their lives and to respond in an active way. It has led people to question openly the practices of specific individuals and institutions. Poorer villagers, women, and others who had been unable to express their opinions in village meetings have started to become more vocal about various forms of oppression.

The educational method used is problem-posing discussion, rather than "banking" or indoctrination. Instead of imposing packaged solutions in a direct and mechanical way, the organizers present the problems as viewed by local people and engage the audience in looking for solutions themselves. The program does not end with the performance—the performance is really only the beginning for a major program of community discussion and collective action.

This brings us to the weaknesses of the Botswana program. A popular theater program works when there is an organization that can take the momentum—the motivation and heightened awareness—created by the drama and build on it. In Botswana, most community organizations are weak and represent only elite interests in the community. Organizations with a more popular base need to be developed to provide the leadership for organizing both the popular theater program and follow-up action. At present, the program is built around the involvement of government extension workers as actor-animators. These workers are becoming more committed to progressive social change, but they are still influenced by traditional development issues—those concerned with modifying the deficiencies of the poor—and are constrained from getting too deeply involved in sensitive political issues.

Chikwakwa Theater and Wason Manoma

Popular theater for development originated in quite a different quarter in several other African countries. Following on the success of the Makerere Traveling Theater in 1966, the university theater departments in Uganda, Kenya, Tanzania, Zambia, and Malawi set up annual tours by their drama students through the rural areas as a challenge to the elitist urban theater and as a way of animating critical awareness, communication, and cultural activity among the rural poor. Of those, Chikwakwa Theater in Zambia was the most closely identified with adult education and development.

Michael Etherton, the founder of Chikwakwa Theater, was instrumental in developing *Wason Manoma* (Plays for Farmers) when he moved to Ahmadu Bello University in Zaria, Nigeria. This represented one of the first occasions when theater people have used their art to generate critical reflection and community action around the problems of specific communities.

In its first year (1977) *Wason Manoma* focused its attention on the national food production campaign, "Operation Feed the Nation" (OFN). As in *Laedza Batanani*, the group started by holding informal discussions with farmers in order to "establish first the farmers' own view of OFN so that the plays themselves start from the peasants' perspectives and the de facto situation vis-à-vis OFN in the area." This research identified instances of local officials and traders selling fertilizer above the controlled price and discrimination against poorer farmers:

> The students explained that they were not bringing fertilizer but plays about fertilizer. The farmers replied that they would prefer the fertilizer; but if the plays were the only thing on offer then at least let them be about the farmers not getting the fertilizer which they were promised. The students perceived a sharp discrepancy between the rhetoric of agricultural development and actual practice; and a latent antagonism between farmers and rural officialdom.*

Back on campus the students improvised four plays dealing with the issues they had discovered. Before going on the road the plays were tested out on an audience of extension workers—a form of action research—and then amended. The students performed the plays in the villages in which they had conducted the research. Most of those who attended were the poorer farmers in the area. In discussions they commented on the relevance of the performances to their own situation, described other problems in getting fertilizer, and asked for advice in setting up an effective organization to serve their interests.

This demonstrated the major weakness of the program: the students were not adequately briefed to provide this sort of information, nor were they in a position to return with it. Without leadership and training in organizational skills, the farmers were unable to act on their heightened awareness. As an experiment, the organizers of *Wason Manoma* have started to work through the development agencies in the area to try to provide continuity and followup.

*Michael Etherton, "Drama for Farmers." London: *The Times*, December 1977.

Ngaahika Ndenda

The most successful use of people's theater in developing critical consciousness and mobilizing people for collective action has been in Kenya. This experiment started with a village community near Nairobi—where land is such a desperate issue that many people are forced to build their homes on footpaths and are often arrested. As part of a Freirean literacy program the literacy groups held discussions on landlessness, poverty, unemployment, housing, and other controversial issues.

Kenya's foremost author, Ngugi wa Thiong'o, worked with them in producing a play around some of the themes they had discussed. Ngugi and their literacy teacher wrote a play, *Ngaahika Ndenda*, and the script was discussed and amended in discussions with the literacy groups. For several months public rehearsals were held in which the whole community participated, taking various roles (there were over 150 parts), working out the songs and dances, improving the performance through collective criticism, and discussing the meaning of the play for their own lives. They built an open-air theater using local materials and seating over 2,000 people. The play was staged every weekend for two months and attracted over 30,000 people.

Ngaahika Ndenda is authentic people's theater, growing out of a popular organization that is controlled and managed by the community. Organizational skills are developed and participation maximized through work on committees. Participation in the program is high because it speaks to the concerns and hopes of the peasants and villagers, heightens their understanding of the structural factors responsible for their condition, and demonstrates their capacity to change that condition through collective efforts. The perspective they have developed is a critical one, not a mystified one. Their analysis of social inequality and dependence exposes the root causes of poverty, landlessness, unemployment, illiteracy. The play reflects the class divisions in society; conflict is not between individuals, but between social classes that are represented by characters in the play.

Conclusion

Experience in Africa has shown that popular theater can play a progressive role in nonformal education, expanding participation and providing a mirror for criti-

cal analysis and a catalyst for discussion and action. However, its policies, programs, and projects must be analyzed in terms of who benefits, how, when, where, and why.

As a tool for persuading people about development information, it is largely ineffective. Putting across information cannot achieve social change when the structural and institutional context in which the receiver exists opposes his development.

In order to avoid being marginal, coopted, or reactionary, popular theater workers must make a deliberate commitment to reverse the social, economic, political, and cultural oppression of the poor. Theater workers and adult educators must engage themselves in the struggle of the oppressed, using theater as an aid in articulating their concerns and demands, in clarifying the nature of poverty, and in working out organizational strategies for challenging those forces that create or reinforce poverty.

Theater is a powerful catalyst, but on its own it cannot achieve significant social change. It must be integrated with the organizational capacity for action. Otherwise it will never be anything more than an interesting and exciting spectacle. Linking theater with popular organizations and developing the necessary organizational skills is perhaps the hardest task but it should be given priority attention: control of the organizations must be put firmly into the hands of the peasants and workers. Given a clearer commitment and strategy, popular theater is anything but a palliative for the deprived groups of Africa. ■

This article is adapted, with permission, from a longer version that appeared in Educational Broadcasting International, *Vol. 12, No. 1, March 1979, available from the British Council, Tavistock House South, Tavistock Square, London WC1H 9LL, U.K.*

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Games Tap Children's Skills as Planners

by David Drucker

One of the intentions of the UNICEF-sponsored International Year of the Child (IYC) is to increase the benefits that will actually reach the children — especially the underprivileged children of the world. However, such a way of stating it echoes concepts derived from charitable origins, where the privileged donated to the deserving underprivileged. We must acknowledge and appreciate what the newer emphasis on *participation* means, both in terms of technically effective development and in terms of the essential recognition of the quality and equalitarian citizen-status that should rightly belong to *all* individuals. It is time we consider children not merely as sentimentalized beneficiaries, but as respected and vital contributors to their own and their community's well-being.

It is obvious to anyone who is familiar with the developing world that children above the toddler stage soon begin to work and contribute to the household, if not actually providing cash, certainly enhancing the social economy of their family and community with their labor. Enter any village and you will see children working. Park a vehicle near any market and the children will want to sell you something or will seek casual employment. In fact, a recent report states that in South Asia alone, 29 million children are gainfully employed, by ILO standards. Another fact is that children *know*. They know an enormous amount, and adults have failed to gather and put to use the very careful *research* undertaken, quite voluntarily and without guidance, by children, using their inherent sense of curiosity.

Watch a child staring intently at a parasitic growth on the trunk of a tree; watch him prod with a stick at an insect; listen to him tell about a neighbor's baby, or discuss who died and how they were sick; notice how every little hole is investigated, and every puddle or trickle of water becomes a focus of attention. Listen to my sophisticatedly educated son tell me about fantastic and truly obscure "achievements" that he has gleaned from the *Guinness Book of World Records*, or my small daughter tell me her skin is full of tiny, tiny holes — all research, however academically faulted.

Let me not labor the point — children *know*. But the community of children shares the circumstance of any community that is to be involved in development: we who are in the development business fail to recognize that those whose lives are, we hope, to be positively transformed, and who have for centuries *known* the local circumstances and condition of their lives, need to assist themselves and educate us by being skillfully encouraged to *know what they know*. What is required is the organization and presentation of their knowledge, so that together we can examine their knowledge in a thoroughgoing and persevering way. If we can help this to happen, we may have earned sufficient trust so that they might be open to listening to and incorporating any new knowing that we developers think *we* know.

We must do this not in an unconsciously arrogant manner of "we-know-best-really," but in a genuinely equalitarian "how-does-this-fit-in-with-what-you-know" spirit of inquiry, which truly expresses a community development philosophy of partnership. We must remember that we have to allay centuries of experience that tells communities that much of what is initiated by outsiders is self-seeking and accrues to those up the hierarchy in the high status positions.

If community participation is to have the vitalizing effect that all the sectoral programs rather suddenly are beginning to say is essential to their development projects, it will be necessary to painstakingly generate (with sufficient and appropriately allocated resources and skilled personnel) a process leading to viable community planning mechanisms from the "bottom up," with ministries and agencies gearing themselves to the largely unfamiliar role of "support-down."

This brings me a long way round back to the children, for they can most certainly contribute to, and might even spearhead, development. After all, they will be around longer than most of us, either enjoying or carrying the burden of all our activities.

Take, for example, those puddles and trickles of water, and add the wells and the ponds, and the tanks, even the storage jars, and the springs and the waterfalls, the creeks and the drains and the rivers that children are the local experts in splashing, floating, and falling in, and knowing about. We know that contaminated water is the cause of untold discomfort and disease, and is one of the main outriders of death itself for far too many of these children. We in UNICEF, our governments, and others have determined to do something about what we know in this respect, with a whole range of clean water supply programs and projects.

We know a lot about a range of possible technical innovations and hardware, drills and pumps and pipes; we know something about the macroeconomics of such matters; and we know something about how start-up ("pump-priming") funds are assembled.

How can we put all this knowing, both available and potential, together? Well, how about inventing "Look, See, and Tell Games" — pleasurable and exciting games, yet serious, as the best games should be?

One game would be for the children to look out for every conceivable source of water in the surrounding area. The children could work in pairs or teams, leaving some kind of marker or agreed "secret sign" at

(Continued on page 10)

Beans in a Bowl

observations on communication and adult education in developing countries

by Andreas Fugelsang

Part One of "Beans in a Bowl" appeared in DCR No. 27, July 1979.

If we are to define an educational strategy better and develop more suitable educational methods, it is necessary to take a closer look at what actually happens when information is processed or knowledge transferred in development work. A generalized and simplified model of reality may prove fruitful for our understanding. I shall not question what we actually mean by notions like "development" or "progress," but merely point to the fact that the process that is implied is fundamentally dependent on transfer of knowledge and information that is acquired through the kind of concept-based thinking and systematic, "scientific" behavior considered typical for Western, industrialized societies. Initially, this information is stored in the concepts of a written language. If we recognize that culture is how people structure their experience conceptually so that it can be transmitted as knowledge from person to person, we have a basis for creating a fruitful model.

The communication loop runs from written culture to oral culture and back again. The development education problem is fundamentally a *cross cultural communication problem.* I am referring not only to the international context of a North-South dialogue, but just as much to the national context within the Third World countries themselves. The written culture is represented by the government and the professional/technical establishment, the oral culture by the rural village or urban neighborhood community.

Some additional details are necessary to amplify the value of this model for a practical nonformal education strategy. In an oral culture, myths, epic poems, and proverbs are the mechanisms for information processing. (A. Cole, et al., *The Cultural Context of Learning and Thinking.* N.Y.: Basic Books, 1971) Proverbs are the means of giving instructions to children, warning a person against ill-considered behavior, or summing up an argument:

"He who knows much does not speak much."

"Little by little an egg will walk."

"Don't catch a leopard by the tail, but if you do, don't let go."

"Fifty lemons are a load for one person, but for fifty persons they are perfume."

The individual must learn not only *how* to use proverbs, but also *when.* It is disrespectful for a youngster to quote proverbs to his elders. As a person progresses toward the status of an elder, he learns more stories and proverbs, as well as more circumstances under which he can apply them. Eloquence is the prerequisite to influence in the village. Therefore, one should not find it surprising that illiterate parents take great care in teaching their children to speak properly.

Success in the village is a result of the application of intellectual skills to social life. Wealth (food), age, and proverbial knowledge are the means which, proficiently used, bring progress for the individual. Western I.Q. measurements are flatly irrelevant for this type of highly developed social and practical intelligence.

Distorted pictures of the village community are constantly emerging. People who are profoundly knowledgeable and vocal in their mother tongue are judged on their performance in a secondary language like English—which is badly taught to begin with. The adult villager, the youngster, or the child in the school or "course" of the written culture—the "Western" learning machine—meets a world without meaning, and, with human ingenuity, adjusts to it by selecting and memorizing conspicuous features in the classroom situation, the inflections of the teacher, or the circles on the blackboard, just as he or she is accustomed to do by practical observation in the village. The learning style is different, the motivation need not be.

"Eloquence is the prerequisite to influence in the village."

Even in the "Western" schools there is uncertainty as to how conceptual development should be taught. I doubt, for example, that the consequences of Piaget's brilliant experiments on concept formation have ever been drawn in a nonformal education classroom. (J. Piaget and B. Inhelder, *La psychologie de l'enfant.* Paris: Presses Universitaires, 1967) Yet some of us who have worked in the village realize that the fundamental problem for illiterates of any age is not the formation of a written language per se, but the formation of the fundamental concepts that underlie the language, and that seem to be shaped in children to some extent even in advance of the language in social environments that provide regular exposure to stimulation of a "Western" type.

I am thinking, for example, of the experiment with the two equal clayballs, whereof one is retained in shape and one transformed into a sausage or a pancake with the question, Is there more clay in the ball? More in the sausage? Or do they both contain the same amount? An illiterate may be prone to answer that there is more in the sausage—with reference to the fact that it looks longer. But it is not only conservation of mass or quantity that is in question. There is also the unstable formation of such concepts as a straight line, horizontality/verticality, and conservation of numbers. Development of such concepts seems to be a prerequisite for transfer of any type of "scientific" knowledge, as they are the only tools with which such knowledge can be handled.

I would suggest that progress can be made along these lines in both the strategy and methodology of nonformal education in developing countries, although great caution is needed, as the whole conceptual framework of Piaget definitely must be regarded as culturally biased.

In a sense one can say that the illiterates—those who belong to a purely oral culture—are to a higher degree controlled by their perceptual field here and now. Development of a written language—the transition to the learning style of the abstractions—is a process away from such perceptual control.

The village student, in his apprehension, often depends more on the teacher's concrete behavior, literally his gestures, than on the conceptual logic. It is not an uncommon experience that students refuse to participate in, for example, group exercises because "it is not proper teaching." Proper teaching is the teacher saying a sentence aloud and the students repeating it in a process of monotonous phonetic duplication, including the oral mannerisms. Or it is the teacher writing a sentence on the blackboard and the students repeating it in their notebooks. The teacher is "sharing his knowledge" by handing out "pieces of knowledge," a process similar to that of handing out the meat after a successful hunt.

The learning style of the Bible class—or rather the teaching style of the missionary indoctrination—seems to be mixed with remnants of the traditional solidarity. These are naturally distortions, but they are sometimes alive.

More about Written Culture

Some words should also be said about the written culture. In the industrialized parts of the world, we have become too casual,

almost careless, in our treatment of words. We have the advantage that all of our experience and knowledge are stored in the written language and can be retrieved, thus it does not matter that we lie to ourselves or others. The ability to abstract leads to a conceptual development that allows us to play all sorts of "language games" with reality. Our mind moves from the object to the concept about the object, from the concrete to the abstract. We construct classification systems and models of reality. In modern science and technology we behave "as if" reality were otherwise, and when our predictions regularly come through, we have found a means of controlling reality. All of our experiences and information about reality are stored in these classification systems and models.

The consequence is that we do not learn as much from observation as we learn from books. Such learning detached from the immediate situation has significant effects on our cognition and our ways of communication. It is a stunning fact that, in industrialized countries, a mere one hundred years ago, words were spoken largely between people; now words are spoken to and from machines. The result is that people are, quite literally, less and less in touch with each other.

This is not the place to expand on the problem of alienation in Western societies. In the written culture, people absent themselves from each other and the objects and mount the written word in between. The reality of a book is that our perceptions are reduced to the single sense of sight, which we exercise while sitting in a chair. In the oral culture, the words are behavior-focused, the oral language is sung and danced. It has a quality of concreteness that

"In the oral culture, the words are behavior-focused, the oral language is sung and danced. It activates all the senses of those who participate in the process of communication."

can be touched and smelled, because it comes from living objects in front of our eyes and not from a page of paper. It activates all the senses of those who participate in the process of communication.

In fact, we should not attempt to describe an oral culture in writing. It is mystical participation, a wholeness of the world in which the villager is totally immersed—and do not discard the word "mystical" as irrational! To plow the earth is not just that; it is at the same time to communicate with the spirits of the heaven, because earth and heaven are one. Through the invention of the abstraction, the negation, and the logical universe, we lost the oneness of the world for the sake of the two-ness. We had to invent the concept of eternity to escape the godforsaken dichotomy of our thought processes. To describe the oral culture in writing is a paradox, because to classify and define cultural elements or individual phenomena is just a result of the analytic process that writing itself entails; they exist only in the writing.

Media and Methods

When we do not know what to do in nonformal education, we call for the use of mass media. We think that the miracles of mass media satellites or the latest gimmicks in educational technology will compensate for our lack of political commitment. The problem is not which medium to use. The problem is rather the conceptualization of a message that can be adjusted to *any* medium. The question is, What is the learning style of the village people and how can it be unified with the new technology? Good media application, innovative message, or curriculum design should take a starting point in the conceptual elements that are found in the local community's learning style and cultural expressions.

In the outline of the oral culture there is a core of elements of importance for a nonformal education strategy. Not only does it overwhelmingly support the use of radio, it also gives detailed prescriptions for how radio broadcasts should be designed, in both form and content. At the same time, we can see strong justification for the use of audiovisual media to bridge the conceptual gap, because there is potential for learning to take place through observation. But as for radio, the medium and the message must be modified in accordance with the cultural prerequisites. Educational film, for example, is strongly dominated by Western modes of expression and editing. It is not only the question of the pictorial "story." It is also the structure of the sequences, the continuity, and the "syntax" that should be adjusted to the perceptual pace of the illiterate. "Reading" moving pictures is also a skill that must be acquired.

From the point of view of educational strategy, it is important to recognize that the type of sustained behavioral change that is needed if social change is to emerge does not result from the use of mass media alone, but from learning situations in which technological media are combined with person-to-person communication and group interaction. (K.D. Jackson and J. Moelino, *Communication and National Integration in Sudanese Villages: Implications for Communication Strategy*. Honolulu: East-West Center, 1972) No educational technology or mass media, however sophisticated, can substitute, in terms of quality, for person-to-person communication. The advantage of modern media technology is purely in the quantitative dimension, the potential for reaching large audiences in a short period of time and repeatedly.

The Meaning of Public Participation

Nonformal education is closely connected with the issue of public participation, a concept that is gaining consideration in national planning papers, development projects, program descriptions, and U.N. resolutions. It is considered as important for rural development as for primary health care or nutrition implementation programs. There seems to be a general recognition of its theoretical implications, but when practice is concerned, the meaning becomes more nebulous. Government officials talk about public participation and mean it, but when it comes to it, they do not mean it

"The problem is not which medium to use. The problem is rather the conceptualization of a message that can be adjusted to any medium."

quite so much. There is a record of backtracking on the issue when the going gets tough in the field. In times of budget cuts, it is convenient for politicians to look to the resources of the local community.

I suggest that the idea of public participation is, indeed, not only the idea of tapping the economic resources of the community. It is particularly not to ask the local people to build a clinic house against the promise of a government nurse who either does not turn up at all or is suddenly sent on long leave for further education without replacement, or to build a schoolhouse against government delivery of corrugated roofing and iron window frames that never turn up because the budget was calculated incorrectly. Such sins are committed continuously, and government officials get their regular absolutions by stating that the villagers are superstitious, backward, deferent, and ignorant.

People in so-called traditional societies have managed to survive by virtue of their oral culture for thousands of years. I am not propounding the return to a romantic, pastoral worldview. I am saying only that what is presumed to be ignorance must be recognized as another life style. All life styles are equal. Successful development work starts with a fundamental trust in people's own ability to cope.

Public participation can mean only people's right to decide for themselves, and efficient nonformal education does not mean talking fast, but listening well. ■

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Games with Children

(Continued from page 7)

each source discovered, so that the same source is not claimed more than once by any "player," and so that a proper claim is made of each "find" and can be judged to belong to the first finder. Some kind of point system and reward for the most points could be devised. All the information from this "Look, See, and Tell Game" would then be brought together and displayed on the largest possible area on which an outline map of the village or community can be marked out—the school playground, a sportfield, a market square, the side of a house. The map can be outlined with chalk, stones, or bamboo, or scraped in the dry earth. The children can make models, with mud, coconut shells, card, anything. Then, with sections of the map allocated to pairs of children, they would fill in the map, marking all the water sources.

A village leader, a health worker, or a youth group might organize the whole game. Better still, an enterprising schoolteacher might use a water "Look, See, and Tell Game" to teach and link many aspects of the curriculum, preferably as a practical activity illustrating what the school is supposed to be teaching anyway—map-making, charts, graphs, handicrafts, hygiene, social studies, essay-writing—or as a valuable learning project in its own right.

Children could be asked to write on "24 hours of water use in my family," describing where the water comes from, how it is collected and stored, how much is used for what, and something about the seasonal variations. They could be set the task of producing a wall mural (children paired, each pair taking a small section of the wall) illustrating water use in the village. All of this clearly has direct relevance to the school curriculum.

From this basic game, we can move on to a "Look, See, and Tell Sanitary Inspector Game." Teams are again formed and reward given, this time to the team that identifies from all the sources the most water risk danger situations (having been told all about these beforehand—cattle drinking, bathing, clothes washing, open wells, defecation). They must place a sign to mark the danger and to claim the site for their team. The signs could be semi-permanent so as to mark the site until the risk was eradicated.

Now the risks would be added (big red spots?) to the sources plotted on the huge map. These water games might be linked appropriately to local water festivals like Holi, Mahathingyan, and so on. When the whole layout is satisfactorily completed, the village leaders and the whole village should be invited to attend a ceremonial inspection of the map. The whole thing will be explained (perhaps by the children themselves) and a full presentation made on "Our Village Water Conditions and What Might Be Done for a Clean Village Water Supply."

Of course, these games and the whole procedure expect much of the schoolteacher or whomever, and might require a campaign to back them up, with an orientation and practice sessions, sponsored by the education, welfare, or health authorities.

All of this information and the community involvement and interest engendered by these "game" activities are the fertile ground upon which can be built specifically local, tailor-made plans. In full consultation with a well-informed community, the engineers, the health educators, and the community organizers can tackle together a whole range of problems. We would, under these circumstances, have every reason to believe that the community has a full stake and will give a full effort to implementation, for the plans will be a reality to them and a challenge to us to fulfill our part in mutually realistic expectations.

This is only one illustration for a child-contributed approach to planning. Variations can be prepared and experimented with in relation to many if not all development activities, such as malaria control, immunization, nutrition (remember children are the experts in knowing the whereabouts and condition of pre-school children and babies). Other sectors concerned with agriculture, irrigation, forestry, husbandry, transport, markets, and so on could help devise action-oriented exercises in this way.

What we need to do is to try it, learn from real experience in the communities and villages where development activity is to take place, and work out some persuasive "How to" guides.

Is there anyone listening and interested out there in the knowledge network? Can we get together, hammer out the details, design materials, and try the approach out somewhere in relation to specific projects? ■

David Drucker is project officer for Social Welfare Training, UNICEF, Rangoon, Burma.

Who Controls the Medium?

I was inspired to write after reading the article, "Development Aids or Global Village Artifacts?", by H. Stuart Hawkins (*DCR* No. 27). This article is representative of many situations in India, but it touches only the very surface of the problem. What has to be understood is the context in which "inappropriate" equipment or technology finds its way into remote parts of the world. The baby food companies have been criticized for advertising their products, but in many other aspects of development, certain transference of values and technologies is usually not taken as seriously.

Very often equipment that one finds in remote parts of the world has reached there because some expert in communication has found it relevant to his idea of communication, and through his own knowledge of the equipment, he is able to control the medium. New equipment also finds its w[illegible] into such places with the help of people w[illegible] want to join or remain members of the international club of communicators by testing and using the latest audiovisual equipment that appears on the horizon.

The choice of the medium is also conditioned by the background of the communicators. During my stay in the UK many people traveling to the developing countries have asked, "Are black-and-white photographs as effective as color photographs?" The answer to this can be viewed from many perspectives. First, in India a color film costs about 10 to 20 times more than a black-and-white film; the cost of a color film may be approximately the weekly salary of a middle-level civil servant. Also, the processing of the color film can be done only in the capital city, whereas black-and-white processing is often possible in the smallest town or can be easily done locally. Second, black-and-white photographs are never used to their potential before deciding whether color is better.

This latter point is probably true in most decisions about which media is appropriate in a particular situation. Communicators hop to the latest equipment without ever [illegible]timally using or designing to the full poten[illegible]tial of the simpler aids. Using the simpler aid is a threat to the communicator's credibility, because often it is a skill any ordinary individual (like myself) can learn. So the obvious retreat is in jargon or in technology that the local population have never seen—like taking the videocassette to places where the newspaper has hardly reached. This is the facade behind which all development communication dormantly rests, a facade that central governments, certain social classes or groups, and urban elites often use to their own advantage to control the media or communications system.

No medium is essentially better than others, only some are better presented and used because certain values influencing the decision or ends justify this. Verbal communication, which is still responsible for the greatest proportion of communication, is totally ignored because it is without technology and too ordinary to lure the communications experts; there is little they can control. The method of production of communication materials greatly influences who controls the medium.

Sunil Mehra, former communications o[illegible]ficer with the Voluntary Health Association of India

The Village Printer: Paper Making Demystified

Benedict Tisa *is a nonformal educational communications consultant who has worked extensively in Mali and Bangladesh. He concentrates on projects that use appropriate media to transmit educational information. The following article is excerpted from a conversation between Ben and the editor of* DCR *in August 1979.*

Your question about paper making goes back to the issue of controlling the information in your own environment. You are what you believe, what you read, what you hear. If you can control the communications in your own environment and establish your own self-image, you can go a long way toward maintaining your identity.

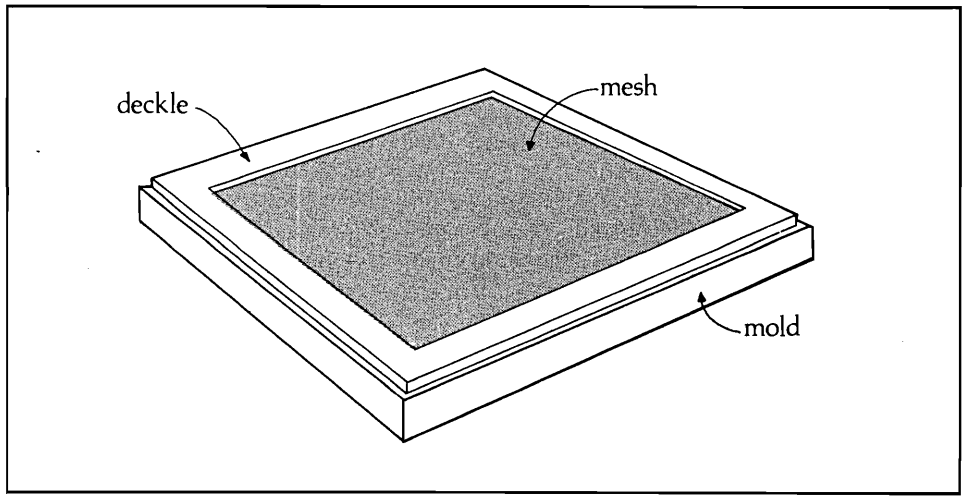
One way to approach information control is through local newspapers. Unfortunately, talking about local newspapers is talking about money. Bangladesh, for instance, imports virtually all of its newsprint, so a local newspaper is not a low-budget item. How, then, can people who are poor and illiterate control the media, even the plain mechanical process of printing?

The last time I was in Bangladesh we came up with an interesting approach to the problem. First of all, we all know from experience that rubber stamps play a role in most Third World countries. People like to use rubber stamps. When you get your papers processed, they have to have that rubber stamp. We took that idea and ended up making a whole set of rubber stamps with the letters of the alphabet, to be used by the functional literacy teachers. They stamp the words or letters out with the set, and they create and control their lesson plans. Clean water? They can stamp "clean water," and they can stamp it as much or as little as they want. The students can stamp it, too, after they start learning to recognize and write their letters and numbers. The whole little printing press cost something like 10 or 12 dollars.

As it worked out, we were also supplying the paper, and that was a problem. I think the next process to introduce to those Bangladesh villagers is the process of making their own paper. I am fundamentally a systems person, and I think it is important for people to understand that paper does not just come out of the store. People respect paper, and the idea of making your own piece of paper and printing on it yourself reinforces the fact that *literacy is communication.* If people control the rubber stamps and make the paper, the whole process is demystified and simplified; it is a complete system.

Making paper is a snap. Anybody can make paper. Not only that, you can make paper out of just about anything. You can make it out of leaves, rice husks, bark, bamboo, grass, wood, flax, straw, banana leaves, sugar cane bagasse, old rags, old paper. You are basically looking for fibers of cellulose, which are contained in the cell walls of all plants.

To make paper, get a bucket, and take whatever you have—old papers or whatever—rip them up, and throw them in the bucket. If you use leaves, clean them, removing all of the stems and non-leafy pieces. Add water and let the fibers soak, preferably overnight. Next, beat the mixture, chop it up, get it thoroughly separated and saturated, either manually or by using a blender, an egg beater, or whatever works. You can add a little bleach to the pulp mixture to make it whiter.



For the next stage you need to build two frames, according to the size of paper you want to make. The first, the mold, needs a piece of fine mesh screen stretched over it. Nylon screen is best and is available in most countries. The second frame, the deckle, fits on top of the mold. If you have a vat large enough to hold your paper pulp mixture, you can dip the mold into the vat and pick up as much pulp as you need for the thickness of your paper. Otherwise, you can pour the fibrous pulp mixture on top of the mold screen. The deckle is in place to keep the pulp from running off of the side of the mold. You will learn from experience how much pulp you will need. The basic procedures are simple but need to be adjusted to the materials you are using.

As the pulp sits on the mold, the water drains through the screen, leaving the fibers on the surface. Remove the deckle, and turn the wet piece of paper onto a piece of felt. (If you have no felt, use plain cotton material, or turn the paper onto a flat surface and iron it to dry it.) Stack up sheets of paper and layers of felt alternately, applying pressure to remove the moisture from the paper. Carefully separate the paper from the felts, as the paper is fragile at this stage, and let the remaining moisture evaporate. Normal drying time is from 6 to 24 hours. In humid climates, drying may take longer.

If you want to gloss the paper, you can dry it on a smooth piece of metal. Make decorative papers by sprinkling flower petals, silk threads, or other materials onto the wet paper after removing it from the mold. You can add color by mixing colored scraps or acrylic paints with the pulp. You can make the paper less absorbent by "sizing" it—floating each sheet briefly in a mixture of gelatin and water (1/2 teaspoon of gelatin to 3/4 litre of warm water).

That is the basic paper-making process. It is cheap, it works, and it gives people control of their own information medium. ■

For additional information on paper making, see Basics 5 *(October 1978), available from Rural Communications, 17 St. James Street, South Petherton, Somerset, England. Ben Tisa would like readers to share with him their experience in simple paper making. Contact him at 616 Lees Avenue, Collingswood, New Jersey 08108, U.S.A.*

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Readers are invited to submit typed manuscripts of no more than 1000 words and to send in photographs.

A Communicator's Checklist

1 ***Institutional Exploration in Communication Technology***, edited by Godwin C. Chu, Syed A. Rahim, and D. Lawrence Kincaid (Honolulu, Hawaii: East-West Center, East-West Communication Institute, 1978), 174 pages.

In 1976 the East-West Communication Institute in Honolulu convened a conference of some 20 scholars from the United States, Asia, and the Pacific "to explore the interrelations between modern communication technology and changes in social organization." Nine papers from the conference were selected for this volume. Following an introduction by Godwin Chu, they are organized into sections on theoretical issues, case studies of communication impact, and policy and planning.

The three papers on theory grapple with what is identified in the introduction as the fundamental question underlying the conference, "What can be expected to happen to society when modern communication technology is introduced?" Each adopts a general approach, potentially at least as relevant to an industrialized as to a developing country. Chu is concerned with finding a systems perspective that will contribute to the understanding of two issues: the role of communication in the structure and functions of a social system; and the way modern communication technology changes the patterns of communication, and hence affects the structure and functions of the social system. He proposes a conceptual scheme that he believes would help in this. I must admit that I found it more useful in indicating what one would like the theory to explain than in indicating how the theory might be developed.

Drawing on his research for the Australian Telecommunications Commission, Solomon Encel provides a wide-ranging review of the roles of communication and information technology within an advanced industrialized society. In so doing, he indicates the importance of the perspective provided by socio-technical systems theory, originally developed by the Tavistock Institute in London. Philip Tichenor and his colleagues from the University of Minnesota identify two kinds of impact of the introduction of new communication technology. One relates to the proportion of communication that is intended to be interactive ("the feedback/distribution ratio"), the other to the flow of information to privileged status groups ("status information flow"). They go on to distinguish two types of technological innovation: some innovations introduce new varieties of channel ("channel-increasing"); others expand the capacity of existing channels ("channel-redundant"). They then discuss features of the social structure that could be expected to affect the impact of either type of technology.

Three case studies are presented in the second section of the book. Kadamattu Eapen of the University of Bangalore draws on the fieldwork of two of his students in describing the impact of satellite-transmitted television on two Indian villages (the SITE project). Sukanya Terawanij of Chulalongkorn University in Bangkok provides a more global discussion of influences of and influences upon mass media in Thailand. Harsono Suwardi of the University of Indonesia describes the role of rural radio forums in rural development in Indonesia and draws some conclusions regarding satellite-transmitted television.

Each of the papers raises important issues; Eapen's paper in particular provides much food for thought. Taken together they raise a number of interesting questions that have obvious counterparts in more industrialized countries, too: What is the timescale on which effects, particularly due to planned experiments, can be expected to manifest themselves? What are the effects on where people spend their time? What are the differences when a national strategy focuses telecommunication on rural areas, rather than adopting a laissez-faire approach? The papers on theory had not helped me to think these through.

The last section is concerned with policy and planning. Lee Ruggels and his colleagues from Stanford Research Institute use the "naturally occurring development experiment" in Saudi Arabia to analyze institutional limitations on communication development in the absence of significant financial constraints. Their primary interest is how to specify the components of a *national system* and their interrelationships in such a way as to provide a useful framework for planning. Then there is a gem of a paper in which Bella Mody of the Indian Satellite Instructional Television Experiment analyzes the background of this project, traces its development, and makes a number of observations on "needs-responsive institutions." As a case study of a planning process, it draws out with remarkable clarity and conviction a variety of institutional, personal, and political factors that are of crucial importance in practice, but that receive regrettably little attention in the planning literature.

In the final paper, Syed Rahim, one of the book's editors, discusses issues raised in papers that have gone before. He concludes, among other things, that "the available theoretical tools for analyzing social impacts of communication technology are grossly inadequate." Indeed they are. Nevertheless, as his other conclusions show, there is much that can now be said with confidence, that *should* inform the planning and management of development communication. I hope it will, but I am not optimistic.

This is a well-edited and nicely produced book. Each of the papers is thought-provoking. And, while their quality varies, the consistency is noticeably higher than is generally the case with proceedings of conferences. I hope it will be read. ■

Available for U.S. $3.00 from the Publications Office, East-West Communication Institute, 1777 East-West Road, Honolulu, Hawaii 96848, U.S.A.

Reviewed by Martin C.J. Elton, chairman of the recently-formed Interactive Telecommunications Program at New York University's School of the Arts and a member of the senior staff of the Alternate Media Center. Before joining NYU in 1976 he directed the Communications Studies Group at University College London.

2 ***Radio Learning Group Manual: How to Run a Radio Learning Group Campaign,*** by David Crowley, Alan Etherington, and Ross Kidd, with illustrations by Petra Hubbard (Bonn, Germany: Friedrich-Ebert Stiftung, 1978), 197 pages.

The authors brought to this radio learning group manual their considerable experience in designing and organizing two major radio learning group campaigns in Botswana: a 1973 campaign on the National Development Plan and a 1976 campaign on the Tribal Grazing Land Policy, both officially considered to have successfully informed and educated the public about these important national issues. In turn, the authors give credit to the many years of experience with various farm forums and other learning group activities from which the models of media-supported mass education programs were first developed.

Written with some light-heartedness and illustrated with cartoon drawings, the manual describes in careful detail the necessary flow of activities from the conception

of the idea of a mass radio learning group campaign to its actual implementation and evaluation. The organization of the campaign is very clearly presented, indicating to the reader all of the requirements of the process. Although the authors display a tendency to overgeneralize and lay down rule after rule without reference to concrete experiences, the book in its latter pages recapitulates the "how-tos" with specfic references to the Botswana campaigns.

The manual appropriately cautions that radio learning groups should be used only when there is a message of "truly national importance." Because such campaigns are complex and costly in terms of people and political and financial resources, the authors argue against using the radio learning group campaign method when "the message concerned has local rather than national significance; the audience is specific rather than general; there are good reasons for deciding that a *long*-term educational program is needed; there are major concerns of a sort that cannot be handled in a mass campaign."

If those cautions are heeded, one may proceed energetically and optimistically to the complex details that the manual asserts one must follow in order to conduct a successful radio learning group campaign. The authors stress the need for obtaining top level political support (a wise priority), and for sufficient funding to pay for supporting staff, training field workers and local group leaders, materials, transportation, programming, obtaining feedback, and evaluation. They also project a system of campaign working teams assigned to specific tasks of planning and implementation, the teams working together in a closely knit support network with enthusiasm for all aspects of the campaign.

The authors argue for a very early, careful definition of the goals to be achieved and the audience to which the educational effort will be targeted. Unfortunately, few of the errors or pitfalls that occurred in the Botswana campaign are mentioned. These examples would have helped to exemplify some of the dicta in the manual.

The manual does not make any reference to the problems of organizing listening groups today. With the growing number of transistor radios available, not only within a village but within families, and the growing encroachment of television in many developing countries, it is becoming more and more difficult to plan and organize listening groups around radio programs. Furthermore, the model presented in the manual is a full-blown elaboration of the listening group method, the success of which requires a very complex supportive organization and considerable money.

Unfortunately, what may have been true in Botswana in terms of resources may not be the case in other developing countries. The manual does focus on short-term campaigns rather than the longer-term farm forum-type of development education effort; nevertheless, few countries will be able to create and support the kind of organization the authors are used to and present as requisite to success. The authors are correct, of course, about such requisites, but there must be other models that can be offered to developing countries that do not have as high a level of resources.

A minor point: The illustrations come across as somewhat paternalistic, with expatriate-looking men playing the key roles. I do not imagine that was the intention of the illustrator, but local workers may be put off by the cute but often helpful sketches and their messages.

This book is one of the best guides to and through the maze of mediated mass education. The flow charts are excellent references for *any* planner. It will be up to each planner in his or her country to determine how much the model presented in the manual can be varied to correspond to the realities of the country and yet reach the kinds of development goals that Botswana achieved through its radio listening group campaigns. ■

Available from the Mass Media Department, Friedrich-Ebert-Stiftung, Godesberger Allee 149, 5300 Bonn 2, Federal Republic of Germany.

Reviewed by Allan M. Kulakow, Academy for Educational Development.

3

Folk Media. 16mm film, UNESCO, color.

One of a series on communication for family planning, UNESCO's film, "Folk Media," presents ways in which traditional folk media can be adapted to carry development messages. The film illustrates the use of folk drama, puppetry, storytellers, and songs to reinforce the aims of family planning organizations in India.

The film identifies for the development education planner three important considerations for successful use of folk media. First, a complete inventory should be made of the existing traditional folk media in the target area. This will help determine the most appropriate medium for message dissemination. Second, the folk artist should not be presented with a ready-made script but rather with the ideas to be presented. Once convinced of the validity of what is being taught, the artist will weave the message into the body of the production in a natural, unforced manner suitable to the medium. Third, avoid overloading the medium (which is supposed to entertain) with the message; otherwise, the audience may be lost altogether. ■

Available for U.S. $200.00 plus shipping from World Wide Pictures, 21-25 St. Anne's Court, London, U.K.

Reviewed by Judy Brace.

4

Social Marketing. 16mm film, George Washington University Department of Medical and Public Affairs, 20 minutes, color.

This film looks at the application of traditional advertising techniques to contraceptive marketing campaigns in Jamaica, El Salvador, and Bangladesh. In each of these countries, the methods of marketing research were used to choose acceptable names for both male and female contraceptives; design attractive packaging and advertising posters; develop catchy radio spots, slogans, and jingles; and identify familiar and convenient distribution channels.

Rather than a "how-to" exercise, the film is an attempt to broaden the perceptions of development educators so they might take advantage of the commercial processes already at work throughout the world. ■

Readers are welcome to request information regarding the availability of this film from the Film Librarian, Information Services, George Washington University Department of Medical and Public Affairs, Airlie, Virginia 22186, U.S.A.

Reviewed by Judy Brace.

How Can You Contribute to CDC?

- If you are in Washington, come to the Clearinghouse, use the Clearinghouse collection, and visit with us. This helps us to stay in touch with what is happening in the field.
- Write and tell us about your projects—your experiences are valuable to your counterparts in other countries.
- Send us regular copies of your publications, papers, and reports. These are valuable to us as we work to strengthen the development communication network worldwide, and they will be used by visitors who come to use the Clearinghouse collection for research in planning their own projects.
- Send us articles for publication in *DCR*. We are planning future issues on evaluation and literacy; manuscripts on these and other topics are most welcome.

PROJECTS IN BRIEF

These project descriptions were written by Barbara O'Grady, of the Academy for Educational Development, using information submitted by readers in response to the Project Information Request in Issue 18 of DCR. Future newsletters will contain four project descriptions an issue until the series is completed.

EXTERN: EDUCATIONAL EXPERIMENT IN RIO GRANDE DO NORTE

Jorge de Mesquita
INPE
12.200 São José dos Campos, S.P.
Brazil

Date submitted to CDC: October 13, 1977

FOCUS: In this project radio and television were used to supplement and upgrade classroom instruction at the primary level in urban and rural classrooms in Rio Grande do Norte. The aim of the project was to augment instruction where there was a shortage of qualified teachers and to reduce student truancy rates. Emphasis was on discovering effective methods of adapting the media to classroom situations, a particularly difficult task in the first grade because of the children's limited command of the language.

SUBJECT AREAS: Education

TYPE OF MEDIA: Radio, television, supporting print material

TARGET AUDIENCE: Literate adults and youths, both rural and urban

SCALE OF PROJECT: Regional—500 schools

PROJECT STATUS: Completed (1972-1974)

SPONSORING/COOP. AGENCY: Brazilian Institute for Space Research (INPE); CEDO (British); USAID

THE CHIWANDA PROJECT

Hilda Kokuhirwa
Center for International Education
University of Massachusetts
Hills House South
Amherst, Massachusetts 01003, U.S.A.

Date submitted to CDC: June 1, 1977

FOCUS: The Chiwanda Project, an outgrowth of the Tanzanian national nutrition campaign of 1975, was designed to combat the malnutrition problem in Tanzania. It encouraged villagers to move toward self-reliance in food by growing more fruits and vegetables and raising chickens. The Institute of Adult Education, which had organized the nutrition campaign, aided the project by providing funds, personnel, and materials.

SUBJECT AREAS: Nutrition

TYPE OF MEDIA: Cassette recorder, photographs, books, pamphlets, posters

TARGET AUDIENCE: Rural adults and youths

SCALE OF PROJECT: 10 villages

PROJECT STATUS: Begun in 1975; in implementation stage as of 6/77

SPONSORING/COOP. AGENCY: Institute of Adult Education (Tanzania); UNESCO

TRANET

William N. Ellis
TRANET
Box 567
Rangeley, Maine 04970, U.S.A.

Date submitted to CDC: 1977

FOCUS: TRANET is a transnational network of and for groups working with alternative and appropriate technologies (AT) in both developed and developing countries. It aims to stimulate exchanges between AT centers and to promote dialogue on the concepts of AT among world leaders.

SUBJECT AREAS: Agriculture, Health, Nutrition, Community Development

TYPE OF MEDIA: Newspaper, newsletter, directory

TARGET AUDIENCE: Literate rural and urban adults

SCALE OF PROJECT: Transnational—over 300 members

PROJECT STATUS: Begun in 1976; ongoing

SPONSORING/COOP. AGENCY: 40 percent membership; 60 percent support (World Bank, etc.)

SYSTEMS APPROACH FOR ADULT EDUCATION

Isaias Aguayo E.
Casilla 95
Viña del Mar
Chile

Date submitted to CDC: April 31, 1977

FOCUS: The aim of this project is to explore new approaches to adult education in Chile through the application of programmed and personalized instruction in order to reduce the number of dropouts and repeaters, improve low grades, and solve distance education problems. Project personnel feel the need for a complete revamping of the traditional system and have promoted numerous curriculum changes; they are seeking an innovation that would eventually lead to tele-education.

SUBJECT AREAS: Education

TYPE OF MEDIA: Programmed material or individualized instruction

TARGET AUDIENCE: 800 adults initially

SCALE OF PROJECT: National

PROJECT STATUS: Project to run 1977-1985; in implementation stage as of 4/77

SPONSORING/COOP. AGENCY: Catholic University of Valparaiso; Ministry of Education

On File at ERIC

Documents listed below are available from ERIC Document Reproduction Service, P.O. Box 190, Arlington, Virginia 22210, USA. Order by ED number and enclose payment for the price listed plus postage.

- Lerner, Daniel, ed. **Asian Communication: Research Training, Planning.** Honolulu, Hawaii: University of Hawaii, East-West Center, 1976, 132 pp. (ED 163 998).

  A selection of eight papers on Asian communication is presented, alerting communication researchers to significant work being done outside of the academic community. Topics include: 1) a Malaysian experience in using commercial resources for audience research; 2) a content analysis model of the Pakistani press; 3) the provincial press and national development in Malaysia and the Philippines; 4) a comparative analysis of the mass communications systems of Burma, Malaysia, and Thailand; 5) teaching and training in building the Asian Communications Network; 6) national planning and telecommunications in the Asia/Pacific context; 7) economics of communication technology; and 8) Asian contexts for development communication. Available from EDRS in microfiche for $.83 or in photocopy for $7.35.

- Elsas, Diana, and others. **Third World Cinema. Factfile No. 10.** Washington, D.C.: American Film Institute, 1977, 28 p. (ED 153 615).

  Included in this guide are the nations of Latin America, India, and Southeast Asia; the non-Arabic countries of Africa; and Puerto Rico. Organizations listed with descriptive information are either actively involved in Third World cinema, concerned with international cinema as a whole, or serving as resource centers for information on specific nations. The schools listed are representative of film/television learning opportunities in Third World nations. There are sections on film archives, film festivals, and distributors either in or concerned with developing nations. An annotated bibliography lists publications on Third World cinema, political cinema, and international cinema. English-language film publications that often cover these topics are also listed, as well as several indexes to periodical literature. A representative listing of periodicals in languages other than English or published in Third World countries includes ten titles in English, French, Portuguese, or Spanish. Available from EDRS in microfiche for $.83 or in photocopy for $2.06. Also available from the American Film Institute, National Education Services, John F. Kennedy Center, Washington, D.C. 20566 ($3.00).

- Jackson, Miles M. **A Report on Libraries in the Pacific Islands: An Impression.** Washington, D.C.: Council on Library Resources, 1978, 12 p. (ED 156 185).

  A five-week trip to study library and information services in the South Pacific included visits to American Samoa, Fiji, New Zealand, the Commonwealth of the Northern Mariana Islands, and Guam. This report provides information on each country's library services, structure and organization, staffing, collections, facilities, and any existing librarianship training programs. In general, the countries are making slow progress toward developing library services; however, progress at the University of the South Pacific, University of Papua New Guinea, and the Papua New Guinea University of Technology is noticeable. The most urgent needs identified by the study are for more trained librarians, greater financial support, and sympathy from government leaders. Available from EDRS in microfiche for $.83 or photocopy for $1.67.

- **Television for Very Young Children and Their Parents.** Reports and papers of a seminar held in Kuala Lumpur, March 7-12, 1976, 31 pp. (ED 164 005).

  This summary of the presentations at a seminar organized by the Asian Broadcasting Union (ABU) in collaboration with the Prix Jeunesse Foundation and with the assistance of UNESCO, includes reports on television programming for very young children in Europe, Japan, Australia, Bangladesh, Hong Kong, Indonesia, Iran, Korea, New Zealand, Pakistan, Singapore, Thailand, and Malaysia. Programs for parents in Europe, Japan, New Zealand, and Malaysia are also briefly discussed. Brief notes on points raised in discussion of the papers are provided, as are a list of participants and the recommendations presented to and later adopted by ABU. Available from EDRS in microfiche for $.83 or in photocopy for $2.06.

Barbara B. Minor, Publications Coordinator, ERIC Clearinghouse on Information Resources, School of Education, Syracuse University, Syracuse, New York 13210, USA.

Dilemmas . . .

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selves are very often convinced that equipment is all that is really needed. As they are usually the first ones to be asked when it comes to establishing a new station, they may cause the impression that costs for equipment are a necessity but everything else is a luxury.

4. Prestige decisions

It can easily be seen that this has something to do with the fourth reason: the way in which decisions are made, and the people who make them. Decision makers in this field are usually of the highest political rank; those who have the know-how are usually not consulted.

The cases where educationalists and media experts are first asked to define the purpose, i.e., the message and the target group, whereupon a decision is taken as to what medium might be most suitable and most efficient for this purpose, are extremely rare; and if this discussion were started, it would hardly ever lead to television as the most suitable medium. However, in most cases, the media specialist finds himself in a situation where the decision to establish a television service has already been made on political grounds, and he can only ask himself whether there is a chance of putting the medium to a more beneficial use than the transmission of speeches.

5. Lack of administrative coordination

A fifth reason is the fact that responsibility for the different fields of budgeting is more often than not split up between different ministries, so none of them feels obliged to see the whole scheme, and decisions are not related to each other. If a country has seen the necessity for long-term planning, this will not automatically solve the problems. It may even aggravate them. A multi-year plan will very often only consider investments, but not follow-up costs.

A plea for planning and training

There is clearly only one solution to these problems: all costs resulting from a project—investment, staff, and running costs, now and in the future—must be seen and planned as a package. The decision makers must be made aware that if they approve a sum x for investment one year, this will inevitably result in the necessity of approving the sum y for recurrent costs the next year, and they cannot do one and reject the other. As a precondition to this, management training must be made available to broadcasting management staff in order to enable them to calculate fully their recurrent costs for future operations. A training course of this kind, however, is not in sight. ■

Dilemmas in Country X: Candid discussions about failures

The contributor of the following dilemma, who wishes to remain anonymous, discusses a typical development communication problem: it is easier to get money for new buildings and equipment expenditures than for staff salaries and on-going program costs.

The editor invites readers to submit descriptions of their own project problems for this column. Author's name—as well as those of the people, agencies, and countries involved in the project—will be withheld upon request.

The television organization of an African country that so far has a studio only in the capital builds a second one in an important regional center. This is done upon the demand of a powerful public corporation that has its headquarters there and that offers to carry part of the financial burden. The studio is built and equipped and ceremonially opened by the president of the state. The ceremony itself and some related events are transmitted by the new station. After three days the studio is closed and locked, two watchmen are left there, and the rest of the staff go back to the capital. When a week later the provincial governor decides to use the studio for a public speech, he comes to a deserted place. Nobody had informed him. He had seen a program labeled with the name of his province every evening. What he did not know was that it was produced in the capital.

The reason: the Ministry of Information responsible had a budget for investment, but not for personnel and running costs for this station. Or, more precisely, the Ministry of Planning, which is responsible for investment, had voted money to install the station, but the Ministry of Public Service, which is responsible for established posts, had not voted money for salaries, nor the Ministry of Finance for running costs.

The case is symptomatic and typical. In an attempt to generalize, it might be said that decision makers more easily appreciate (or at least give in to) requests for new buildings and equipment than to requests for more staff and higher running costs. The reasons for this may lie in any one of five different directions.

1. One-time versus recurrent costs

The first reason is that money for investment is a one-time expenditure, whereas salaries and running costs are recurrent. The decision makers know what money they have available this year, but they do not know for the years to come, so they are afraid to commit themselves for the future.

It may also be easy to raise the money for equipment from foreign sources. Foreign money, however, can usually not be obtained for other costs. This raises the question of the responsibility of foreign agencies for mistakes committed.

2. Hardware is easier to calculate

The second reason may be that in discussions on budgeting, the case for the purchase of equipment is easily more convincing than the case for staff and running costs. The equipment can be named precisely, and quotations can be found in the catalogues of suppliers. As for staff and running costs, it is not easy to really prove that so many staff are really needed, that programs could not be made at costs a little lower.

This of course brings us to the fact that African radio and television stations, adult education departments, and other organizations concerned usually suffer from a serious deficiency in management skills and techniques. In many cases, no statistical data are available on programs, no evaluation is done of program impact or of staff efficiency, and as a result, no analysis is made or can be made of the factors contributing to the production of programs or to their impact on the audience. Management deficiencies are so bad that in many cases not even regular program planning is possible. Decisions on programs are made on a day-to-day basis.

3. Engineers have an equipment bias

A third reason can be seen in the experience that broadcasting technicians them-

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In this issue . . .

Development Communication Report

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Is Evaluation Useful?

by Emile G. McAnany

> ***"Evaluation is the process of delineating, obtaining, and providing useful information for judging decision alternatives."***
> *— Daniel L. Stufflebeam*

Evaluation is a growth business in the United States, and, like so many other of our products, we are beginning to export it. Those who would question this assertion need only review the bibliographies of books such as Schramm's *Big Media, Little Media* or Jamison and McAnany's *Radio for Education and Development*. An important question about this increasing literature is whether it is useful. Implicit in this question is another one: useful to *whom*? The answer is not a straightforward one, nor do I propose to give a simplified response.

In order to begin an answer, we might distinguish among a set of potential users of evaluation research: the project itself, the sponsoring agency, and the community of evaluators. If we look closely at the kinds of evaluations that are carried out in the field, we find a variety of activities, and if we push a step beyond the studies themselves, we find a variety of purposes inspiring these efforts. Although the purposes do not always coincide perfectly with the actors, they are most easily identified with them. Thus, project managers are interested in results that improve their enterprise; the sponsoring agency is most often concerned with generalizing the results for policy purposes; and the evaluator, while trying to serve other ends as well, is concerned about what the research may contribute to the research and evaluation literature.

The evaluation results may serve one or another of these purposes, but usually not all three. If we are to talk about the usefulness of evaluations of communication projects in Third World countries, we need to be aware of the multiple purposes that such research can serve.

Useful Evaluation for Projects

Evaluation can address a number of aspects of a project; thus the literature speaks of *planning, process,* and *impact* evaluation, identifying three points in time when evaluation may be undertaken. The terms *formative* and *summative* evaluation are used to emphasize the generic purposes of evaluative efforts, the former aimed at improving a project, the latter at providing information for a summary judgment of it. In theory, all of the information gathered in an evaluation could be of use to project managers.

Past experience warns us, however, that theory may not reflect the real world, and we must ask frankly whether evaluations have been useful to project managers. I would venture to say that, generally, evaluations have not been useful to the managers of the projects in which they were performed. The reasons are many, but we might summarize them as follows: 1) there is no interested audience among managers, often because the evaluation is not designed to help the management but rather to serve the purposes of other actors — the sponsors or evaluators; 2) the evaluation is seen by the

(Continued on page 2)

Shedding Some Light On Evaluation's Myths

by Robert C. Hornik

Debunking myths affords considerable pleasure. Evaluation offers its share of debunkable myths, even though its history as a field for scholarly concentration is brief. I will address here four myths — propositions about evaluation that have been widely accepted but are not deserving of their status. I will refer particularly to evaluation as it is applied to educational broadcasting.

Myth #1: Evaluation is an objective, apolitical activity, providing unbiased information to decision makers as they optimize their decisions. This proposition is wishful thinking in most circumstances. Evaluation operates in a political environment. Decisions about social programs generally, and about the application of educational broadcasting specifically, are reached through a tremendously complex process. Whatever the actual chain of command, whether the society be democratic or authoritarian, the decision about whether and how to implement educational broadcasting will be negotiated among competing constituencies. These might include the planning staff of the person who signs on the bottom line, the entrenched educational bureaucracy and its network of power relationships, teachers, students, parents, the business community and other employers, foreign aid agencies, and other governmental entities.

Each of these concerned parties will attempt to influence the shape of the decision. Each has its own values to maximize and expectations of how much influence it will be able to wield. Decisions taken in such a political maelstrom are not likely to hinge on cost-benefit ratios.

Further, there will be no single decision. Even if there is a commitment to go ahead with educational broadcasting, the shape of the program will be hammered out in negotiation among the interested parties. In that process, there will be room for infor-

(Continued on page 2)

This essay is in part based on work done with colleagues in the Stanford University Evaluation Consortium. That work will be published shortly by Jossey-Bass, Inc., under the title *Evaluation for an Open Society.*

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Is Evaluation Useful?

(Continued from page 1)

managers as irrelevant, untimely, or not credible (the evaluator, for instance, may not be able to deliver an answer when it is most needed politically); and 3) the results are not communicated in a way that speaks to a manager's needs (the evaluator may write only in English or in social-science-ese, which is worse, or may not include a summary in a 400-page report).

Evaluations need not be useless to project managers; there are remedies. First, formative evaluation can be built into the system. For example, in the Nicaragua Radio Mathematics Project (see "Using Feedback for Program Production," page 8), the gathering of feedback provided a constant guide for creating the remainder of the mathematics program for each grade. One caution needs to be added, however: such formative evaluation will be built into the program — that is, will be used — only when project managers genuinely understand the function of the feedback. There are countless projects where feedback is dutifully gathered only to sit on shelves.

Second, project managers can define their needs and hire someone to work with them to meet these needs. (This may be a somewhat rare situation except in a crisis or other time of change, but these are often opportune times to do evaluations that can provide guidance to managers.) In this case an interested audience exists for the evaluation results. A current example comes to mind. ALER (Latin American Association of Educational Radio) has 35 member radio school groups in 19 countries. They are undertaking a major evaluation, the results of which are aimed specifically at helping them to rethink their goals, organizational structure, and financing. The likelihood of these results being used is higher because project managers themselves are participating in defining the study.

Third, evaluations can prove useful to project managers through their political function. Project managers need information to keep their projects funded and alive. The prestige of an outside evaluation, even if it is only vaguely positive, can often be quite useful to a manager in securing support from funding agencies.

Useful Evaluation for Policy Making

Many international, bilateral, and even national agencies sponsor evaluations in order to see if pilot projects have worked, with the hope that the results may be generalized from a pilot to a regional or national scale. Evaluation literature is replete with assessments of pilot projects or experiments. Evaluators have not, however, taken a careful look at which of these early projects survived, and why. What we find are many impact studies, varying widely in quality, with a variety of results. Again, making an impressionistic judgment, I would say that not many pilot project evaluations have been useful for policy. The reasons for this are twofold.

First, the evaluations may carefully evaluate the impact or outcomes of the pilot project, but tend to include few of the contextual factors that account for the project's success (or failure) in this particular setting. Even when such factors are recognized, they may refer to such things as motivation, leadership, or organizational ability, which are hard to measure and replicate. An idea may be vindicated — for example, you can teach mathematics successfully to rural primary students with radio — but these results do not translate easily to other settings and other circumstances without careful evaluation of all of the variables that may have contributed to outcomes (such as, in the Radio Mathematics Project, the importance of an experienced team leader and good backup by outside consultants).

Second, policy interests shift within funding agencies; by the time a carefully done evaluation is complete (in two, three, or even four years), the agency may no longer be interested in the results. We have all seen the shift from education to nonformal education to family planning to health that many international agencies have undergone. This is true of national agencies as well. A new government in a country will define a new set of development priorities in its new five-year plan. With the next plan there is often no continuity unless a project has been lucky enough to engineer institutional survival by establishing a regular budget line.

The remedies for these problems are not simple, but I might point out that it is possible to include in pilot project evaluation enough detail on context and process to generalize the results to another setting. Also, evaluation could well focus on those types of projects that are more permanent and therefore less subject to the changing whims of funding agencies.

Useful Evaluation for Science

In using such a loaded term as "science" to speak of how the evaluator can find evaluation useful, I am aware that many are skeptical of evaluation as "social science" and of social science as "science" itself. The main point that I would like to make in closing is that, in the work of summarizing and generalizing the evaluation experience in development communication, the evaluator tries to strike a balance between the academic and the practical. Insofar as the science of communication can be tested in the real world, we can validate or reject some of its postulates. Evaluation research is not an ideal way to accomplish this, but for development communication it provides an important opportunity to deepen insight into how communication operates in concrete social settings.

On the practical side, in attempting to understand, summarize, and generalize the experience in particular projects, the evaluator provides the more generalized knowledge that policy makers often need. Whether planners actually make use of this information is an empirical question that cannot be answered here. What is encouraging is that more summaries of projects are being made available in a variety of ways, and that, in some cases at least, concerns about better planning and implementation are being voiced. Evaluators would like to believe that perhaps their efforts are making some difference. ■

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Evaluation's Myths

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mation an evaluation can supply; there will also be major decision areas that will be so constrained by political concerns that the evaluator's efforts would be irrelevant.

The evaluator can help the decision-making process in this context only if he understands the political forces at work. On the one hand, he can determine which parts of the decision are open to information — those in which political interests are not at issue — and gather the appropriate data. For example, evidence about the amount of time a child will pay attention to a program will almost surely weigh heavily in decisions about the length of in-school instructional radio programs.

Beyond gathering information to affect technical decisions, the evaluator can work in the political arena as well. By providing credible information, the evaluator can help interested parties negotiate with a clearer picture of the likely consequences, and is therefore surely improving the political process. It should be emphasized that the evaluator will be helpful only insofar as he gathers information at points of leverage in the system, that is, about those issues that have not been decided upon in advance of negotiation.

Up to this point I have treated the evaluator as if he were free to gather information clarifying the interests of all of the decision participants. However, the evaluator has a sponsor, who may have special interests. Is it the planning chief who has hired the evaluator? He may be skittish about the evaluator working to inform the teachers,

reinforcing — or even awakening — their concerns. The planning chief may prefer that the evaluator spend all of his resources investigating questions that interest the sponsor, or that are likely to produce answers endorsing his perspective. Few participants in the decision process will be anxious to involve other groups if there is much likelihood of active opposition from them.

An evaluator often finds that his information does not influence decisions because most of his work takes place after the project has become operational. By that time, most of the decisions about the shape of the program have been made, and, more important, political commitments have been made. Even aspects of the decision that would have been open to information, had it been available, will be closed to it by the time it can be brought to bear. This paradox is a major fact of the evaluator's life, and it brings us to the next of our myths.

Myth #2: The evaluator's central concern is obtaining an answer to the question, "Did the project work?" Real evaluation is summative evaluation — Did this treatment produce the desired outcome? — and the bulk of the evaluator's resources should go to determining sound causal inference. Such is the customary wisdom, but it profoundly distorts the evaluator's task.

There is nobody out there listening to the answer to that question. In order to make a reasonable judgment about whether a given project is a success, the evaluator must wait until it has reached a relatively smooth operational stage. However, by that time, substantial financial and political commitments have been made and are essentially irreversible. After generating the momentum to begin a program of serious educational broadcasting, convincing the various elements of the community to forge ahead, building the studios, and installing the transmission equipment, no one will be much interested in finding out that the project does not work. A negative report will be buried faster than it can be duplicated, unless a change in the political environment opens the system to new information.

Summative evaluation can communicate one of three messages about a project: it did not work, it worked a little, it worked a lot. Yet the recent history of evaluation tells us the inferences from most evaluations are open to methodological challenge. A determined critic (even a self-critical evaluator) can develop alternative interpretations of data that open any conclusion to doubt, and there is no more determined critic than the manager of a project whose evaluation has turned out poorly. Whether the critique be substantive, methodological, or statistical, it will create doubt about the evaluator's conclusion. In a political environment supportive of the project, such doubts will count for a great deal.

If the project that is to be evaluated cannot use the summative evaluator's information, is there another potential audience? No and yes. There is no audience for the specific question, Did treatment produce outcome? There may be an audience for a question stated more broadly.

The natural audience for evaluations is the range of persons or institutions considering extensions or replications of the current project. However, merely knowing that the project produced a useful outcome will not be enough. Project extensions or replications will operate in a somewhat different setting from that of the ongoing project, reach a somewhat different clientele, and inevitably incorporate a different implementation of the treatment. One needs to know, not whether the treatment produced the desired outcome in a particular version of the project, but whether a similar treatment in a new setting with a new target audience is likely to succeed.

In doing a simple treatment and outcome evaluation one assumes that the treatment is easily transferable. Nothing can be further from the truth. I would argue that the greatest variation in success among projects has to do with the details of their implementation, and relatively little to do with the intrinsic concept of, say, educational radio. The evaluator who wants to communicate with the future audience must tell not only *whether* but also *how* the project worked.

Projects operate on models the characteristics of which are partially explicit and partially implicit. An educational radio project may offer a first grade mathematics curriculum. Explicitly, the project managers assign a specific role to the teacher in the classroom, and to complementary printed materials. They make a laundry list of other decisions, each of which makes assumptions about who the project's participants are and what they will be able to do.

Each of these decisions hypothesizes certain causal relationships: a major explanation for the failure of students to learn mathematics has been the inability of the classroom teacher to present material effectively, and presenting the core of the curriculum via radio will overcome that problem; a daily 25-minute radio lesson and a 15-minute follow-up session by the classroom teacher will be more effective than other divisions of the 40-minute class period. Designers of future systems must know what decisions were taken and how the system was expected to work. Then they must know which causal hypotheses were validated and which were not.

The examples I have presented thus far have stressed questions relating to the proposed learning process. There are also questions relating to implementation activities. For example, a planner considering the implementation of an El Salvador-like educational television project should know not only about the 15 to 25 percent gain in learning, but also about the two teachers' strikes that accompanied the introduction of ETV within an educational reform.

Some evaluation theorists have argued that this "process evaluation" — investigation of how a project achieves or does not achieve its ends — is the appropriate mode for evaluators concerned with helping ongoing projects to improve their effectiveness. I would suggest that such an argument can be extended — that process evaluation is also the appropriate strategy for those who describe themselves as summative evaluators, who have a primary audience of persons interested in future extension or replication of the project.

Myth #3: The field experiment is the optimum evaluation strategy. Mistrust of this proposition follows easily if one mistrusts the previous two. Recall that the evaluator is operating in a political environment, and that, if he is to be useful, he must answer a large number of questions about both process and effects. In that context, the field experiment is only one of the research strategies that may be chosen, and more often than not it is less than optimum. The argument has two central elements: field experiments are expensive and leave one able to answer fewer research questions, and field experiments offer precise answers to uninteresting questions. As a necessary complement to these propositions, I will argue that there are alternative research strategies that will be adequate in given contexts.

First, with regard to the expense. Field experiments draw heavily on financial resources. Research staff time spent in organizing the field experiment is usually greater than for alternative designs, additional money is spent for data collection (magnified by the presence of a "control" group — one that does not receive the treatment), and costs for data preparation and analysis are marginally higher.

An evaluation team also has limited *political* capital. The mounting of experiments implies the recruitment of control subjects. In the case of an instructional television project, for example, we might want to randomly assign schools to participate or not to participate. It can be a major undertaking to convince schools that it is in their interest to serve as controls, mainly because it is probably *not* in their interest. Constituencies may not think that sacrificing themselves for the long term benefits of the system is a terribly good idea, and convincing them, either through artful persuasion or through ar-

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ranging appropriate directives from superiors, will use up a fair supply of political capital.

In contrast to the limited financial and political budget allotted to the evaluation, there are a large number of research questions that require answers. The field experiment is a useful tool for answering a question about a single independent variable. At best, with a sophisticated design and a large enough sample of observations, one may be able to obtain information about the effects of two or three independent variables. However, if the evaluator's focus is on understanding the role of each element in the system so as to make recommendations for the next project down the line, he must answer questions about each. Expensive field experiments take away from the number of questions the evaluator can answer.

If the field experiment is expensive, at least it has the redeeming value of obtaining the most useful answer to the given question. Right? Wrong! Certainly it obtains the answer with the highest internal validity — that is, one can be sure that whatever effects are seen are due to the project treatment. Unfortunately, in the process of administering the field experiment, the evaluator often distorts or manipulates the project treatment in such a way that it no longer represents what one is interested in learning about. This argument rests on the previous assertion that only a small portion of the *variation* in success of projects is related to the intrinsic quality of project concepts. Rather, most of the variation in success is related to the implementation process.

While it is not inevitable, it is common that in his drive to purify the project to see its effects, the field experimenter will attempt to "control for" what he perceives are extraneous characteristics of the implementation — to ensure that they do not influence the outcome of the experiment. For example, the experimenter makes sure that all of the television classes are broadcast as scheduled, the teachers' guides arrive on time, and the student workbooks are not missing any pages. The real project will have to survive with the problems. By controlling for these supposedly extraneous characteristics, the field experimenter gains a neat experiment but suffers a reduction in external validity — the ability to make inferences from the study of a particular treatment to other situations.

Most good field experimenters are aware of the method's pitfalls, but they counterargue that there is no satisfactory alternative method for making the inferences about effects that the evaluator must often make. In some situations that may be true; in many it is not.

Imagine an agency undertaking a major literacy campaign in a rural area of a developing country. The campaign utilizes an innovative pedagogy, and other countries have shown interest in adopting the strategy if it proves successful and appears transferable. Thus an evaluation is developed. Among other research questions, one concerning whether substantial effectiveness was demonstrated is considered of great importance. The evaluator is charged with answering the outcome question adequately but using minimum resources.

The textbook approach to answering the outcome question would probably be to undertake a field experiment, assigning perhaps 20 villages to receive the treatment and 20 to remain as controls. Such a research effort might produce a satisfactory estimate of campaign effect, but the costs would be high. The evaluator must ask whether such an expenditure would be justified. Would it be possible to obtain an adequate answer with a less elaborate research design? What particular threats to the validity of the evaluation's findings or inferences are eliminated by the field experiment that cannot be controlled through less elaborate procedures? Assume we eliminated the 20 control villages, and instead measured levels of literacy before and after the campaign in 20 villages that were actually treated. What then would be the major threats to valid inference?

If there were *no* change in literacy levels, the inference would be that the treatment was ineffective, and it would not be challenged. The major research task would be to explain the failure. If there were a *positive* change, the important threats to an inference of project effectiveness would be either that the change resulted from spontaneous improvement in literacy level or that it resulted from some other teaching program that took place at the same time. If it were a *small* positive change, it would be difficult to eliminate the possibility of spontaneous improvement. However, if the objective of the project was to have a major impact on village literacy, a small change would probably represent an inadequate project outcome. Concern would be focused on explaining the relative failure, not on determining the exact proportion of the small change attributable to the project.

Finally, there might be *substantial* positive change which, if attributable to the project, would represent an important justification for its replication. On the surface, the two threats to valid inference remain — spontaneous improvement and the simultaneous action of other teaching programs. Yet how serious are they? Substantial spontaneous improvement in literacy over a relatively brief time is not likely, and as for the possibility of simultaneous action by other programs, one could determine whether alternative programs could have been responsible for the literacy improvement simply by conducting a number of conversations in villages showing substantial improvement.

For this project, therefore, a strong case can be made for eliminating the field experiment in favor of a somewhat less costly before-after study, combined with some direct field observation to make sure alternative projects were not operating. The answer is not of the same quality; it cannot be stated with equal precision or confidence in a statistical sense. Yet the quality is almost surely adequate to the needs of likely evaluation users.

Myth #4: Social science research methods are most useful to ongoing projects through their application to evaluation. It is a bit sad to see this last myth challenged, since social scientists take pleasure in exercising the apparent power connected to doing summative evaluation. But if they want to help operating projects, they need to apply their talents in another direction.

There are useful roles social researchers can play in the service of operational projects, and they all depend on a clear understanding of where the flexibility in project design really lies. The greatest flexibility is to be found when the project is being formulated. While substantial parts of the project design will be constrained by political and financial forces, there is still substantial room at that point for the influence of information. Planning research that describes audience needs and characteristics and explores constraints on possible delivery systems can be very helpful in determining a project's trajectory. If planning research is framed by some clear definition of the decisions yet to be made and the nature of data likely to inform these decisions, its usefulness will be magnified.

The pilot test would seem to be the optimum vehicle for planning research; in practice, however, I think it is not. To be effective, pilot tests must generally incorporate most of the features of the proposed project. In the process of deciding to undertake the pilot effort, project backers have already done the necessary negotiation within the decision-making community and its respective constituencies. Even if the approach tested in the pilot is publicly defined as experimental, it will have gained substantial momentum through the hiring of personnel and the creation of a product. Evidence that the experimental year was a failure may not result in major retooling if the political coalition that spawned the project remains intact. The pilot staff will argue — justifiably — that all projects face rough sailing in their first year. In fact, full-[illegible]

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Acción Cultural Popular: Report of a Field Evaluation

Acción Cultural Popular (ACPO), a pioneer in the development of radiophonic education programs aimed at rural audiences, was founded as a private nonprofit operation in Colombia in 1947 through the initiative of a young priest, José Joaquín Salcedo. It is now the oldest and perhaps the largest nonformal education program in the world concerned with improving the quality of life of rural populations. Through the years the goal of ACPO has remained fundamentally the same: basic education for human and social development through a complex system of mass media reinforced by group and interpersonal communication.

ACPO's main educational activity is the radiophonic school, through which a family, or any group, can use radio, together with other elements, to follow daily classes in such subjects as reading and writing, basic arithmetic, information for health improvement, introductory concepts for agriculture and animal husbandry, and themes related to social life and ethical values. Educational programs, broadcast over Radio Sutatenza, reach all parts of Colombia and are heard by literally millions of rural Colombians, as well as by an unknown number of people in five neighboring countries. In addition to radio, extensive use is made of printed materials. These include the largest rural newspaper in Latin America, *El Campesino;* six basic textbooks *(cartillas);* and a collection of more than fifty books in a home library *(Biblioteca del Campesino).*

ACPO places major reliance on a large number of fieldworkers, mainly volunteers, who serve as monitors for the radiophonic schools, as community workers, and as local leaders in the ACPO program. Special institutes have been developed as training centers for community workers, local leaders, and supervisory field staff. Currently, more than 1,000 people comprise the ACPO staff. The success of ACPO has led to the development of similar programs in at least 14 other nations of Latin America, and nations throughout the world have looked to ACPO as a model for delivery of nonformal education to their rural populations.

In 1972 the Learning Systems Institute at Florida State University (FSU) began a study of nonformal education programs in developing countries, including Jamaica, Korea, Thailand, Ethiopia, Indonesia, and most of the countries of Latin America. Particularly impressed by the potential generalizability of the ACPO experience to other developing nations, FSU decided to examine in depth ACPO's mode of operation and its impact on the lives of its target audience, reasoning that if ACPO were to serve as a model for other programs, it was essential to know with what effectiveness ACPO's purposes were being accomplished. It was proposed to ACPO that FSU would conduct an intensive external evaluation over a three-year period. In 1976 ACPO agreed to cooperate in the field evaluation of its program, and the U.S. Agency for International Development entered into contract with FSU to conduct the project.

In the course of its existence, ACPO has directed its efforts to changing individual and family *behavior, knowledge,* and *attitudes* in well-specified ways. The primary purposes of the FSU evaluation were to determine whether measurable changes had taken place in the rural population of Colombia and to investigate the extent to which such changes could be attributed to ACPO's intervention. Another purpose for conducting the study was to improve ACPO's capacity to conduct its own field evaluations, thereby enabling the organiza-

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The Impact of the Evaluation on the ACPO Organization

by Hernando Bernal, Ernesto Santos, and Guillermo Torres

An analysis of the effects of the recent evaluation of Colombia's Acción Cultural Popular (ACPO), conducted by Florida State University (FSU), points up that the evaluation had two major kinds of impact on the ACPO organization and its activities. First, because ACPO was committed to the evaluation, the organization opened itself to the evaluation team in all stages of the process, from research design to data collection. The resulting contact between the organization's personnel and the evaluation team fostered a dynamic process that gradually modified many of the activities of the organization. Second, once the evaluation was completed, ACPO began to react by developing new strategies to implement the findings.

Other organizations that are undergoing external evaluations of their educational programs can anticipate the same kinds of effects. Thus, a more detailed discussion of ACPO's experience will be helpful in alerting others to the potential impact of evaluation on the organization, both during the evaluation process and after the evaluation team has returned home.

Effects of the Evaluation Process

The evaluation process itself had an impact at two levels of ACPO's organization: at the central level of the institution and at the community level.

In the early stages of the evaluation, the FSU project team set about reviewing and cataloguing ACPO's goals and purposes. This process involved a bibliographic review of ACPO's program documents, as well as discussions of the goals and purposes with ACPO staff at different levels. As a consequence, ACPO personnel had to provide explanations that in many cases led to their having a clearer understanding of the institutional philosophy.

Another task of the evaluation team was the identification and classification of the roles and tasks of ACPO field personnel. This process produced a list that, for the first time, summarized the many activities of the field personnel. Field personnel worked with central ACPO staff in analyzing the list, systematizing the tasks, and assigning priorities in terms of the training program for field personnel. Thus, as a result of this stage of the evaluation, ACPO undertook a revision of the systems and methodologies used for training field personnel, as well as a new curriculum design for its training institutes.

A third consequence grew out of the project team's content analysis of ACPO's educational materials in the three areas covered by the evaluation: the effects of ACPO on literacy, health, and agriculture. This detailed analysis produced a map of ACPO's strengths and weaknesses in the production of educational materials that will guide programmers in revising, adding, or eliminating certain themes of the radiophonic school broadcasts, as well as the content of newspaper articles, booklets, and other printed materials.

In addition to the program aspects, the research process also dealt with financial issues through a cost-benefit analysis. As a result, the organization is using new financial analysis methods.

In the process of preparing the evaluation questionnaires, the case-study analysts interviewed ACPO users in many rural communities, discussing with them the indicators they were proposing for measuring

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tion to obtain continual, systematic feedback on the success of its various program interventions. (One by-product of the evaluation effort is a series of self-instructional training programs on all aspects of field evaluation.)

In October 1976 the nucleus of the FSU field team moved to Bogota and took up offices within the ACPO complex. Certain members of the ACPO research staff were seconded to the project staff.

The evaluation process included several phases. First, the project team familiarized itself with the organizational processes of ACPO. These included all financial, organizational, and programmatic aspects of ACPO's activities. Second, from ACPO documents and personnel, the project team catalogued ACPO's general and specific goals and purposes. They then identified specific behaviors associated with these goals and purposes which, when exhibited singly or in combination by an individual *campesino* or family, would support the inference that the goal had been attained. These relevant behaviors — called *indicators* — were then structured into an in-depth interview format for use by case-study analysts.

The following are examples of the indicators developed in each of the three topic areas chosen for the evaluation study:

Agriculture

- Avoidance of the practice of "burning" to prepare the land for planting
- Use of contour planting on hillsides
- Construction of compost piles
- Construction and/or improvement of animal shelters
- Vaccination of animals
- Care of water resources and water reserves

Health

- Utilization of health services
- Inclusion in the family diet of vegetables, milk and dairy products, fruits, grains with high protein value, and meat
- Planting of family vegetable gardens
- Practice of personal hygiene
- Pre-natal care and proper nutrition for pregnant women
- Medical care and proper nutrition during first years of life
- Participation in recreational activities and sports
- Prevention of contamination of drinking water

Basic Education

- Ability to read
- Practice of reading on a regular basis
- Ability to write
- Ability to perform and apply mathematical functions
- Participation in study groups

The case study analysts intensively interviewed 41 selected rural families to verify the relevance of the information they were seeking to ACPO's purposes and to determine the most appropriate means of gathering such information on a large scale. Using feedback from the case-study families, the project team worked with consultants who were specialists in this type of field data gathering to modify and refine the survey questionnaire instruments. These were again field tested with *campesino* families and revised until a satisfactory final interview package was developed.

Survey instrument packages were designed to collect information in three areas: the family, the *vereda* (the rural community — usually a cluster of farm families living near one another as an identifiable social unit or community), and the use of ACPO services. Field interviewers used the family instruments package, a total of 285 questions, to obtain from each family interviewed basic data concerning the family itself; information concerning knowledge, practices, and attitudes in the fields of basic education, agriculture, and health; the *campesino* view of the general impact of ACPO; the degree and extent of use of ACPO services by the *campesino* family; and the interviewer's own assessment of the conse-

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ACPO's effects. This same type of interaction took place during the pilot test of the refined survey questionnaires. A third opportunity for contact at the community level was during the stage of data collection, when the evaluation fieldworkers interviewed 601 *campesino* families all over Colombia. In each instance the evaluation personnel, who were external to ACPO, could inform the non-users in the communities about the ACPO services and could motivate users toward a better and more permanent utilization of ACPO.

Applying the Evaluation Results

The second major area in which an organization is affected by its evaluation is in the establishment of mechanisms applying the findings, once the study is concluded and the results presented. The results can have an impact ranging from the level of general policy to that of specific procedures within the organization.

In the case of ACPO, at the general policy level the organization plans to carry out a series of seminars with personnel from the various operating units of the institution, so that they can become familiar with and analyze the results of the evaluation and discuss possible strategies for its application. In general terms, applications on two different levels are foreseen: on the internal level, for the institution's activities aimed at rural Colombians; and on the external level, to enrich ACPO's consulting services to other nonformal education programs.

As already mentioned, the evaluation emphasized three of the themes taught by ACPO — literacy, health, and agriculture. Analysis of the data for each of these three areas revealed the benefits and the deficiencies in terms of knowledge acquired by the peasants, practices realized, and attitudes toward specific aspects. This information will guide ACPO's management, and particularly its media programmers, in instituting reforms of the curriculum.

Data analysis also provided information on the use of the various educational media. Using these data, the different sections of ACPO charged with responsibility for each medium will be able either to confirm or to redesign the strategies of use and distribution now in operation. For example, one of the newer program elements is a set of phonograph records of the basic literacy course, for use by *campesinos* who cannot listen regularly to the radio broadcasts. Evaluation data revealed that the distribution and use of the records were limited. Thus, new strategies are being devised to publicize the records and encourage their use.

During each stage of the evaluation, a team of ACPO officials worked as counterparts to the FSU project personnel. The officials had the opportunity to receive theoretical as well as practical training in evaluation, thus helping ACPO to strengthen and enrich its evaluation capabilities. These personnel are now involved with ACPO's ongoing evaluation activities. The project also produced a series of modules on the evaluation of nonformal education programs that will be used to train ACPO personnel.

On the external level, since 1977 ACPO has been developing a variety of consulting services to similar nonformal education programs in Latin America. The consulting, based on a thorough explication of ACPO programs, is built around courses in which the personnel are instructed in such specific skills as media production and curriculum design. Future courses and other forms of external assistance will integrate the results of the evaluation. ■

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quences of ACPO on the family.

The *vereda* survey package of 96 questions included two instruments, the first to collect data on the context in which the *campesinos* live, using government data and information from sources such as the parish priest, community officials, community leaders, ACPO personnel, and others; and the second to assess the consequences of ACPO in the community, summarizing the perceptions of the ACPO team.

The family case studies instrument contained all of the questions in the family instruments package, supplemented by 101 questions designed to provide in-depth information in each of the various sections, focusing on ACPO as a cause of learning. This instrument was administered by field interviewers to 56 families.

A total of 32 Colombian fieldworkers, interviewers, and coordinators were selected, trained, and sent to 30 randomly selected communities to interview 601 randomly selected rural families. Field date was collected from March to May 1978.

The survey generated an enormous amount of information about the families' use of ACPO's programs, about other relevant context data, and about the observed and reported effects on the family. The completed survey forms were returned to the Bogota project office, where they were given to a trained team of recorders and coders who coded the data for entry into the computer. All data was entered into a computer at the FSU campus, where it was analyzed primarily through the use of correlational analysis. It was essential that the analysis determine the degree of relationship, if any, between the family's participation in ACPO programs and the surveyed behavior exhibited by the family in health, agriculture, and basic education.

The findings support the conclusion that ACPO's programs have had substantial beneficial effects on the lives of the Colombian *campesino* families. It was possible to extract the contributions of other sources of benefit and examine only those effects exclusively attributable to ACPO.

In the health area, there is an interdependence between the ACPO processes and other health support services in the context of the community. Each contributes about equally to the variance in practice, knowledge, attitudes, and overall health effects.

In the agricultural area, there was a significant relationship found between participation in ACPO programs and effective agriculture behavior. The other sources of agriculture support did not significantly contribute to the effects in agriculture.

In basic education (knowledge and skills in reading, writing, and arithmetic), it was found that families who were frequent participants in ACPO activities tended to have relatively high proficiency, and that this relationship persisted when the effects of other educational programs were removed. In the survey it was found that most of the respondents had received their basic education in formal schooling, yet the high users of ACPO tended to score higher when actual measures were made of proficiency. This suggests that, while ACPO may not be the earliest or primary source for learning the basic education skills, it serves an important role in improving and maintaining these skills.

It was found in the statistical analysis of the results that the five ACPO elements — Radio Sutatenza, the weekly newspaper, the training texts, the home library, and the fieldworkers — were so highly interdependent that it was impossible to conclude that any one element contributed more to the observed effects than did any other. The degree of use of the ACPO elements was more important than the particular combination of elements that were used.

In one part of the survey, the families were asked to report on ways in which ACPO had been helpful to them and to make judgments as to the importance and value of this help. The following tables summarize their responses.

TABLE 1
Ways in which the teachings of ACPO in reading, writing, and mathematics have helped the family

TYPE OF ASSISTANCE	% FAMILIES*
No help	12
Sending, receiving letters	6
Reading books, newspapers	35
Keeping family accounts	33
Continued study	13
Other ways	20

TABLE 2
Ways in which learning about agriculture with ACPO has helped the family

TYPE OF ASSISTANCE	% FAMILIES*
No help	7
Gained more knowledge	49
Improved agriculture and animal husbandry	47
Increased production	13
Participate in economic associations	1
Improved income	9
Other ways	6

TABLE 3
Ways in which learning about health with ACPO has helped the family

TYPE OF ASSISTANCE	% FAMILIES*
No help	8
Gained more knowledge	29
Improved health, fewer diseases	29
Improved food and nutrition	46
Improved cleanliness and hygiene	31
Better care of the children	16
Ability to perform first aid	10
Made more frequent use of health center	66
Improvements of the home	25

TABLE 4
Most important topic taught by ACPO according to family response

TOPIC	% FAMILIES
None	5
Economics and Labor	22
Health	27
Basic Education	17
Mathematics	4
Spirituality	3
Responsible Procreation	1
Community Organization	2
Other	18

TABLE 5
Distribution of families who think that ACPO has helped the family

DEGREE OF HELP	% FAMILIES
No help	7
Little help	34
Much help	59
Importance of ACPO help compared to other institutions	
ACPO not important	9
ACPO less important	11
ACPO of equal importance	18
ACPO more important	46
ACPO was only institution	16

TABLE 6
Most helpful ACPO materials, activities, persons

ACPO ELEMENT	% FAMILIES
None	6
Textbooks	32
Library Books	2
Newspaper	7
Radio	24
Extension course	1
Institutes	2
Record-set courses	0
Community volunteer	1
Leader	11
Supervisor	0
Not applicable	13

TABLE 7
Reasons why elements used now are not as useful as they were in the past

SUGGESTED REASON	% FAMILIES
Does not apply	46
They do not satisfy the needs of family	7
Inadequate schedule	8
Absence of leader or community volunteer	19
Radio courses are not interesting	9
Not enough extension courses	2
There is a local school now	3
There are other institutions now	2
Structure of the class has changed	3
Other reasons	21

*The percentages do not sum to 100 since each family was able to make more than one response.

(Continued on page 8)

In Table 1 it can be seen that only 12 percent of the families reported that ACPO had been of no help, while its role as a source of reading materials was the most frequently reported means of help. When asked to select the most important topic taught by ACPO (Table 4), 27 percent of the families chose the health area, with 22 percent selecting economics and labor as most important. In Table 5, 46 percent of the respondents said that ACPO was more important than other institutional sources of help.

When asked to identify the ACPO resources that had been most helpful (See Table 6), 32 percent indicated the textbooks, and 24 percent the radio. Eleven percent chose the leader. However, when asked why ACPO elements were less useful at the time of the survey than they had been in the past (where this was found to be the case), by far the largest number, 19 percent, indicated that the absence of a leader or community volunteer was the most important reason (Table 7).

The finding shown in Table 7 does highlight the importance of the interpersonal component as essential to the working of the ACPO process. This is also consistent with the reports of several of the field survey team members that the ACPO fieldworker is an important catalyst to the ACPO process. While the data regarding the importance of the fieldworkers is inconclusive, the firm and uniform judgment of all of the project staff who have worked with the *campesinos* in their communities is that the leaders and community volunteers are essential to ACPO's success.

In evaluating the activities of ACPO, FSU looked not only at whether the program had achieved its goals, but also at how the people in rural communities felt about the program and how they viewed its various components. Moreover, the staff examined the processes through which the effects they found were attained. Thus, the results of the evaluation will be useful to others who want to learn from ACPO's successful experience in using a coordinated program of radio broadcasts, fieldworkers, and print materials to improve the quality of life of rural populations. ■

This article is derived from a project document written by Robert M. Morgan, Liliana Muhlman, and Paul H. Masoner of the Learning Systems Institute, Florida State University. The final evaluation report and the training modules on evaluation processes will be published in early 1980 and will be available in English and Spanish. For information contact Dr. Robert M. Morgan, Learning Systems Institute, 206 Dodd Hall, The Florida State University, Tallahassee, Florida 32306, U.S.A.

Using Feedback for Program Production: Formative Evaluation of Instructional Radio

by Jamesine E. Friend

The success of educational broadcasts frequently depends upon how well the programs are field tested before dissemination to a wide audience. In recent years broadcasters have become well convinced of this principle, and there are few major radio or television projects in the world that do not field test materials to some extent.

The kind and quality of data collected during field testing varies enormously from project to project, as do the qualifications of the personnel who conduct the field tests. Frequently the impact of the program on the audience is measured by questionnaires or interviews designed to elicit both favorable and unfavorable reactions to the material broadcast. At one end of the scale are simple audience surveys that reveal only whether or not (or how often) people listen to the broadcasts. At the other end are quite sophisticated, individualized interviews in which trained psychologists probe for subtler effects such as changes in attitude attributable to exposure to the programs.

More rarely, producers attempt to determine if the habits, skills, and knowledge, as well as the attitudes, of the target audience are changed in a measurable way. For example, changes in planting techniques, eating habits, or infant mortality rates might be measured.

The above kinds of information gained during field testing are used as a basis for revising programs before they are broadcast on a wider scale, and the result is usually an improved product that will have the desired effect.

This model of producing programs — field testing them with a relatively small but representative population, and using the results as a basis for revision before wide-scale broadcasting — has been used most widely in the development of programs for nonformal education, where messages can be conveyed in discrete "chunks" and where a major problem is audience appeal. Although there may be an entire series of programs, there might not be a regular listening audience, so each program must stand alone as a self-contained unit delivering its message as best it can to a listener who may not have heard previous broadcasts and may not listen to future ones.

In educational broadcasting for formal education — programs to be used within a normal school setting — the goals and problems are quite different. The main goal is more likely to be the development of specific skills than conveying general knowledge or changing attitudes. The problem of attracting an audience is of a less pressing nature, since the student will ordinarily listen regularly under the supervision of a teacher or monitor, and can be expected for the most part to have heard the preceding programs in the same series. Also, it is more likely that the audience is relatively homogeneous — all students of roughly the same age and at the same stage of formal training.

Thus, in several ways, the problems of the producer of formal education programs are less severe than the problems of the producer of nonformal broadcasts, who must appeal to a casual listening audience with a wide variety of backgrounds.

On the other hand, the producer of programs for formal education has problems not often found in nonformal education. He must impart skills that can be taught only by a structured sequence of carefully designed, integrated instructional units that build slowly but continuously toward a set of well-defined objectives. Skills such as arithmetic, grammar, reading, or language cannot be taught in small independent units that can be broadcast in random order; the component skills must each be taught in the proper sequence, and instruction cannot proceed effectively unless the audience has mastered preceding lessons.

The audience for formal broadcasts is also more likely to be immature, lack the general knowledge that an adult audience (even though illiterate) would be more likely to have, lack fully developed language capabilities, and have a shorter attention span.

Because of both the audience and the subject matter, the field testing techniques used in nonformal programming are not entirely appropriate for formal education programs. Formal education programs cannot be tested in isolation, since the effectiveness of any one program is dependent upon its place in a series and upon how well the groundwork was laid in the preceding lessons. The primary goal of the series is the development of skills that are learned slowly, and only after both effective instruction and ample practice. Since these skills develop slowly, it is often difficult to see an appreciable gain after a single broadcast, although the cumulative effect of a series of 150 to 175 lessons may be large.

The integrated nature of a formal education series dictates that the only way to test its effectiveness is to test the series as a whole rather than field testing individual

programs or short sequences of programs. Although it would seem appropriate, then, to develop the full set of programs before field testing, there are other factors that preclude this being the optimal approach. The major factor is the changing needs of the audience over time. The students learn as the series unfolds. They become more adept at tasks they once could not do. Their language abilities develop, and they learn to do simple tasks more rapidly. Thus, a task that could once be done only haltingly and with repetitive, clearly phrased instructions can later be done rapidly and accurately with little or no specific instruction. To accommodate these changes, the program design itself must change over time.

The Radio Mathematics Project staff had to take all of these factors into account when it set about the task of preparing daily mathematics instruction for elementary school students in Nicaragua. The project designed and used a system of production whereby programs could be continuously adapted to the changing characteristics of the audience, even though the producers could not predict in advance the exact rates at which changes in the listeners would occur. In this system, which is modeled after industrial feedback processes, programs are produced just before broadcast, and the reactions of the listening audience are continuously monitored to determine the direction and amount of change that is taking place. The information collected is used in the planning and production of upcoming programs in the series. If the students are learning to respond more quickly to a particular type of oral drill, the time allowed for such response is decreased in future lessons. If there are signs that the students need more practice in a particular skill, additional practice is built into upcoming lessons. If students show that they can now understand abbreviated instructions, the number of words used in similar messages is reduced in the future.

In this way, the production of a year-long series can be accomplished within a single calendar year, and the final product is well fitted to the audience for whom it is intended.

The greatest difference between this feedback system of production and the more traditional field testing described earlier is that in the feedback system there is no actual revision of materials. The information that is collected in the field is used in the production of new programs, not in the revision of those that were already broadcast. That is, it is not a method for correcting faults but rather a method for adapting design parameters for an audience in a state of flux. If the programs were quite inappropriate, with blatant faults that would preclude their use with a larger audience, the only remedy would be revision. The feedback method is not appropriate if programs are far from the mark. The production team must be capable of producing good, if not perfect, programs with high face value before the feedback system can be effective. Thus, the two methods, feedback and revision, are complementary, and both can be used to good effect under different circumstances, even within the same project.

So far we have said little of the nature of the information collected in the field. The kinds of information needed and the tools for collecting them will vary depending upon the content of the programs, the nature of the audience, and perhaps the locale. In the Nicaragua Radio Mathematics Project, the main sources of information were paper-and-pencil tests administered at weekly intervals, and daily classroom observation. Less regular but highly useful sources of information were interviews with children, questionnaires for teachers, conversations with teachers and other school personnel, and comments made by outside observers.

The feedback system should not be undertaken lightly, especially by inexperienced or tightly budgeted production companies, since the demands on the personnel and managerial staff are quite high. The effectiveness of the feedback system depends upon how rapidly the production staff can respond to the changing needs of the audience. For this reason, programs cannot be stockpiled but must be produced just before they are broadcast, which means that the production schedule is always tight, with little room for unexpected problems. There must be a fairly large, capable evaluation staff that must monitor student outcomes continuously and report immediately to the production staff so that their findings can have an effect on lessons in production. There must be a detailed but flexible plan for the introduction of new topics, with allowance for the time it will take for needed feedback data to reach the production team. The production of such a plan is no trivial matter, for the planning must take into account both instructional objectives and evaluation objectives as well as time schedules.

Despite the difficulties and expense of using a feedback system for the production of instructional radio broadcasts, the resulting higher quality and appeal of the programs will amply reward the producer who uses such a system, as has been amply demonstrated by the success of the Radio Mathematics Project of Nicaragua. ■

Jamesine E. Friend, the former director of the Nicaragua Radio Mathematics project, is currently a visiting scholar at the Palo Alto Research Center, Xerox Corporation, 3333 Coyote Hill Road, Palo Alto, California 94304, U.S.A.

What is formative evaluation?

One of the clearest descriptions [of formative evaluation] that we've heard comes from our Stanford colleague Jamesine Friend. She described the process using this example: Imagine an oil refinery where there is a pipe that carries one kind of oil. The oil flows through the pipe to a tank, where it is mixed with other kinds of oil and other chemicals. The amount of oil flowing through the pipe should always be the same but, for all kinds of oil-refinery reasons, this is not always the case. To correct this, a meter is installed at the end of the pipe to measure the amount of oil coming out. This meter is connected to a valve that can be opened and closed automatically. When the flow is too great, the valve is closed slightly; when the flow is too small, the valve is opened further. So, this "formative evaluation" system has two components: the *meter* that measures the flow, and the *valve* that adjusts it. The system must have both 1) information about how well the ongoing process is working and 2) a means of changing the process if this information shows that a change is necessary.

We would add one other component: a *criterion*. When the process is measured, the actual performance has to be compared to a criterion and then the "valve" must make the process return to the criterion level.

Therefore, the components of a formative evaluation system are:

- a criterion
- a measuring device
- an adjusting device

Note the organic relations within each pair of components. Without the criterion, the measuring device would not make any comparative measure. Without the adjusting device, the information gathered by comparative measurement would not be fed back into the process.

And note, also, that there is no suggestion that the pipe be turned off during all this. This measurement and adjustment takes place while the process continues. Formative evaluation is done while the project is ongoing; it is done without stopping the project. ■

From "Formative Evaluation in Theory and Practice," a paper by Peter L. Spain and Emile G. McAnany, Stanford University Institute for Communication Research.

Special note: Guest editor for this issue of *DCR* was Barbara Searle, Senior Research Associate at the Institute for Communication Research, Stanford University.

On File at ERIC

A series of reports on educational television in the Ivory Coast examines various aspects of the primary and secondary education systems, as well as the Out-of-School Television programs for rural adults.

The selected reports reviewed in this column and the related papers listed are all in English and available in microfiche from the ERIC Document Reproduction Service (EDRS), P.O. Box 190, Arlington, Virginia, 22210, U.S.A. Some are also available in paper copy.

Educational Television Production

- Evans, Stella, and Klees, Steven. ***ETV Production in the Ivory Coast.*** Washington, D.C.: Academy for Educational Development; Stanford, California: Stanford University, Institute for Communication Research, 1976, 87 pp. (ED 172 739).

The authors assess the efficiency of educational broadcasting in the Ivory Coast from the standpoint of the utilization of physical and human resources. The general organization of the educational television complex in Bouaké, the costs of the production system, and the process by which programs are produced are described, as well as the interaction among the producer, the printed support materials writer, and the director in the production process. Also detailed are the organizational structure and utilization of resources, feedback and evaluation mechanisms, and the change from film to videotape production. Available from EDRS in microfiche for 83c plus postage.

Cost Analyses

- Grant, Stephen, and others. ***Economic Studies and Out-of-School Education Program Evaluation for the Ivory Coast. Final Report.*** Washington, D.C.: Academy for Educational Development; Stanford, California: Stanford University, Institute for Communication Research, 1978, 125 pp. (ED 172 737).

This report is the final in a series of 17 reports concerned with cost analysis and projections of the instructional television program and the Out-of-School Television (OSTV) project in the Ivory Coast. It includes an introduction to the OSTV project in its first five years, a description of the main elements of the in-school reform, an outline of the progression of OSTV objectives, examples of the subject matter covered in OSTV broadcasts ("Télé pour tous"), and an explanation of the role of the teachers who serve as animators for OSTV.

The larger series of 17 reports is discussed in the context of a "social impact model"; each of the economic studies performed as part of this project is summarized under the appropriate educational level. Recommendations for action are presented for each level, with recommendations for OSTV categorized by order of magnitude: those designed to improve operations and impact without any sizable increase in resources, those that require a significant increase in resources, and those that involve larger decisions and a greater commitment by the government. Available from EDRS in microfiche for 83c or in paper copy for $7.82 plus postage.

- Eicher, Jean-Claude and Orivel, François. ***Cost Analysis of the Primary Instructional Television Program in the Ivory Coast.*** Washington, D.C.: Academy for Educational Development; Stanford, California: Stanford University, Institute for Communication Research, 1977, 114 pp. (ED 172 735). Available from EDRS in microfiche for 83c plus postage.

Secondary Education

- McAnany, Emile G. ***Secondary School Alternatives in the Ivory Coast: Considerations.*** Paper prepared for the Evaluation Unit of the Ministry of Primary Education and Television, Abidjan, Ivory Coast, 1976, 29 pp. (ED 172 755).

Intended to provide information for Ivorien decision makers, this paper presents an overview and cost comparison of technological alternatives for the delivery of instruction at the post-primary level. The five alternatives for regular secondary education are: traditional, audiovisual traditional, instructional television (ITV), ITV extension of the school (Mexican model), and distance learning. The Telesecundaria System in Mexico is described in detail. Distance learning is discussed as a means of providing both formal and nonformal education and training for adults (18 and over). Examples from other developing nations are cited, and the viability of this alternative for the Ivory Coast is discussed. A list of references is attached. Available from EDRS in microfiche for 83c or in paper copy for $3.32 plus postage.

- Danière, André, and Orivel, François. ***Post-Primary Options in the Ivory Coast.*** Washington, D.C.: Academy for Educational Development; Stanford, California: Stanford University, Institute for Communication Research, 1977, 193 pp. (ED 172 750). Available from EDRS in microfiche for 83c plus postage.

- Wells, Stuart. ***Labor Markets and the Social Demand for Education: An Analysis of the Ivory Coast.*** Washington, D.C.: Academy for Educational Development, 1977, 46 pp. (ED 172 743). Available from EDRS in microfiche for 83c plus postage.

Out-Of-School ETV

- Grant, Stephen. ***An Administrative History of Out-of-School Educational Television in the Ivory Coast.*** Washington, D.C.: Academy for Educational Development; Stanford, California: Stanford University, Institute for Communication Research, 1977, 104 pp. (ED 172 730).

This report describes the basic organization, management, and evolution of the department producing "Télé pour tous," the first attempt to use national television in the Ivory Coast to bring educational and informational programs to a non-school adult rural public. The department's tasks were 1) to produce TV programs, 2) to train and supervise TV animators, and 3) to stimulate interest in and viewing of its product. Discussed in the report are the decision-oriented methodology of the study; basic background information on the project, including target audiences, program objectives, and policies; a detailed examination of six key features of the program; a comparison of the national plan for out-of-school education with the new directions of the out-of-school department; and an analysis of how the program fits into the context of national planning strategies. Available from EDRS in microfiche for 83c or in paper copy for $7.82 plus postage.

- Grant, Stephen. ***On Needs Assessment of Out-of-School Educational Television in the Ivory Coast.*** Washington, D.C.: Academy for Educational Development; Stanford, California: Stanford University, Institute for Communication Research, 1978, 44 pp. (ED 172 746). Available from EDRS in microfiche for 83c or in paper copy for $3.32 plus postage.

- Beneviste, Annie. ***The Reception and Animation of Out-of-School Educational Television Programs in the Ivory Coast: A Case Study of Four Villages.*** (English Summary by Theresa Silverman.) Summary of a Master's Thesis, Stanford University, 1977, 43 pp. (ED 172 752). Available from EDRS in microfiche for 83c or in paper copy for $3.32 plus postage.

- Seya, Pierre Thizier, and Yao, Faustin Kouadjo. ***Television for the Rural African Village: Studies of Audiences and Impact in the Ivory Coast.*** Stanford, California: Stanford University, Institute for Communication Research, 1977, 66 pp. (ED 172 758). Available from EDRS in microfiche for 83c or in paper copy for $4.82 plus postage.

Barbara B. Minor, Publications Coordinator, ERIC Clearinghouse on Information Resources, School of Education, Syracuse University, Syracuse, New York 13210, U.S.A.

PROJECTS IN BRIEF

These project descriptions were written by Barbara O'Grady, of the Academy for Educational Development, using information submitted by readers in response to the Project Information Request in Issue 18 of *DCR*. Future newsletters will contain four project descriptions an issue until the series is completed.

COMMUNICATION INFORMATION SERVICE

Wayne Singleton
P.O. Box 208
Suva, Fiji

Date submitted to CDC: July 28, 1977

FOCUS: Communication Information Service (CIS) is a program of the Pacific Conference of Churches (PCC) and serves as PCC's media mouthpiece to disseminate information through a 14-million-square-mile region in which 25 percent of the world's languages are spoken. Its activities include producing reports, newspapers, leaflets, and graphic materials concerned with population/family planning, literacy, community development, and education. The visual aids must be literal in order to be effective at workshops attended by representatives of diverse cultural backgrounds.

SUBJECT AREAS: Population/Family Planning, Literacy, Community Development, Education

TYPE OF MEDIA: Cassette recorder, radio, videotape, slides, photographs, newspaper, books, pamphlets, posters

TARGET AUDIENCE: Varies, depending on the program

SCALE OF PROJECT: South Pacific

PROJECT STATUS: CIS restructured at the beginning of 1977; in implementation stage as of 7/77

SPONSORING/COOP. AGENCY: Pacific Conference of Churches

PROJECTO DE ENSINO A DISTANCIA

Reginaldo Naves de Souza Lima
C. Postal 990
30000 Belo Horizonte, M.G.
Brazil

Date submitted to CDC: September 3, 1977

FOCUS: Projecto de Ensino à Distância trains teachers of mathematics according to Piaget's theory of cognitive development. The project develops instructional materials and trains teachers in their use through both correspondence courses and personal contact.

SUBJECT AREAS: Education

TYPE OF MEDIA: Radio, slides, newspaper, books, pamphlets, posters

TARGET AUDIENCE: Literate adults

SCALE OF PROJECT: Regional

PROJECT STATUS: In planning and implementation stages as of 9/77

SPONSORING/COOP. AGENCY: CECIMIG (Centro de Terinamento de Professores de Ciências de Minas Gerais)

LOW-COST A/V MEDIA FOR DISTANCE LEARNERS

Tony Bates
IET
Open University
Milton Keynes, England

Date submitted to CDC: May 27, 1977

FOCUS: This project attempts to cost and describe the educational advantages and disadvantages of low-cost, non-broadcast audio and audiovisual media used as alternatives to television and radio for nationally distributed, home-based learners in courses with fewer than 500 students.The project describes new electronic technology, including electronic blackboard, computer display on home television sets, CEEFAX/Oracle, and Viewdata. Aspects of the project that are of special interest to the development process include its administration and organization, its method of inquiry, the description of low-cost audiovisual technologies, the effects of such technologies on course design, and its method of dealing with the question of cost-effectiveness.

SUBJECT AREAS: Education

TYPE OF MEDIA: Cassette recorder, radio, videotape, videocassettes, television, 8mm film, filmstrips, slides, photographs, phonograph records, CEEFAX/Oracle, telephone, electronic blackboard, Viewdata, flexi-discs

TARGET AUDIENCE: Literate adults

SCALE OF PROJECT: National

PROJECT STATUS: Research and inquiry project, ongoing as of 5/77

SPONSORING/COOP. AGENCY: Open University, United Kingdom

INTERCULTURAL COMMUNICATION WORKSHOP

Milton J. Bennett
Janet M. Bennett
Department of Speech-Communication
Portland State University
Box 721
Portland, Oregon 97201

Date submitted to CDC: August 24, 1977

FOCUS: The Intercultural Communication Workshop (ICW) is an educational technique aimed at developing more effective communication across cultures. ICW trains mixed groups of United States and international students in value suspension, nonverbal behavior awareness, and intercultural empathy. The project's techniques have been applied successfully to training for international travel/study programs, research in other cultures, business personnel on overseas assignment, and international student orientation, and have been used as a university course for intercultural education.

SUBJECT AREAS: Education

TYPE OF MEDIA: Videotape, 16mm film, slides, books, simulations

TARGET AUDIENCE: International visitors and U.S. and international students

SCALE OF PROJECT: International

PROJECT STATUS: Begun in 1972; in implementation and evaluation stages as of 8/77

SPONSORING/COOP. AGENCY: University of Minnesota, Portland State University, Student Project for Amity among Nations (SPAN)-Minnesota, American Heritage Association (Oregon)

A Communicator's Checklist

1 ***Communication with the Rural Poor in the Third World: Does Information Make a Difference?,*** edited by Emile G. McAnany (Stanford, California: Stanford University Institute for Communication Research, 1978), 143 pages.

From 1973-78 Stanford's Institute for Communication Research conducted research and field work (in the Ivory Coast and Guatemala) on the role of communication and information in the formal and nonformal educational activities of Third World countries. The work was focused on development projects targeted to the rural poor. The results are summarized in this volume of four reports by different authors who "attempt to bring together as much empirical evidence as we currently have available on the problem of information-communication in rural development and to place this evidence within a framework that is both theoretically sound and practically applicable."

This framework, which serves as a mutual point of reference for the authors, is summarized by the editor in the foreword: "If there is a single generalization or principle that flows from the field testing of development communication theory over the past five years it is that information communicated to the rural poor can, indeed, make a difference in improving the quality of their lives, but how much of a difference will depend on a *combination* of both technical and political factors that are vital to any significant change." The common context of each author's approach is one of advocacy for the needs of LDC rural poor and greater equity in rural development.

The first report critically presents common assumptions about the role of information in rural development and describes the information environment of the rural poor: "We can conclude that there are probably not many channels functioning to bring development information to rural people." Political and technical constraints on development communication approaches are outlined, followed by a discussion of potential and real impacts of information in rural poor areas. Noting that "the small subsistence farmers may not lack for information but often cannot use it. . .because of structural constraints like land size or lack of credit," the author suggests that "the principle for planning information strategies that pay off for the poor seems to be in a careful estimate of the ratio for potential change in the target area. . . ."

The second report examines the distribution and stratification of mass media in rural areas of LDCs, focusing on the composition of the audiences of the different mass media, and on how the stratification of rural audiences affects issues of access, exposure, content, understanding, and utilization. Data from two studies on mass media exposure, in India and Nigeria, are presented, reflecting the author's theoretical contention that there is inequality in the distribution of mass media, both between urban and rural areas, and within rural areas themselves. The author concludes that "even where mass media are widely available, serious reservations remain concerning the contribution of the information to a more equitable rural development . . . , particularly . . . with commercially oriented mass media in rural areas."

The third chapter, "Who Benefits from Education and Information?", is based on field research and evaluation experience in the Ivory Coast's nonformal education system, which uses television to reach illiterate adults and youths. In addition, results of field research in information, education, and communication (IEC) experiments in six other developing countries are presented to demonstrate who really benefits from these experiments: "The common observation . . . is that the intended target group is not reached, but only a segment thereof."

The final report reviews the approaches taken by economists to evaluate the impact of communication technologies and activities on agricultural development. The report concludes that of the two main economic approaches to evaluation—the individual-oriented theories of the neoclassical economists and related perspectives from other disciplines, and the more historical, structural view of Marxist and related economists—the latter "have been considerably underemphasized and underfunded."

The editor of these reports has suggested that their potential usefulness lies in "either a more careful application of both technical and political analysis in the planning and execution of IEC projects; or, at least, a clearer vision of what the constraints are that prevent this application." The authors would seem to have made a conscious effort to limit their audience, as the reports require some familiarity with research techniques and language, and they frequently fail to connect theoretical content with real opportunities for application. While such communication problems via the print medium have some of the same results that the authors criticize in development efforts—for example, limiting message impact and audience—their contribution lies in placing development communication in its broader socioeconomic context. This could serve to promote more critical examination of IEC projects. The difference, however, that the information offered here could make to the lives of the rural poor of the Third World will depend on its distribution to and acceptance by planners and project implementers, whose perspective may be restricted by their concern with the exigencies of day-to-day application. ■

Available from the Institute for Communication Research, Stanford University, Stanford, California 94305, U.S.A.

Reviewed by Carol Carp, a communications consultant currently working in Mali.

2 ***The Use of Radio in Social Development,*** by Terry D. Peigh, Martin J. Maloney, Robert C. Higgins, and Donald J. Bogue (Chicago, Illinois: Community and Family Study Center, University of Chicago, 1979), 172 pp.

Radio continues to grow in importance as a communication and social force in developing countries, particularly in its application to social development. The use of radio to inform and educate is not new; however, there is a growing trend toward more *effective* use of the medium, with better planning and program production, pretesting of messages, integration with other mass and interpersonal channels of communication, and more thorough follow-through evaluation.

The Use of Radio in Social Development provides a basic guide to the *effective* use of radio. For those new to the medium, the book will serve as an introduction to the basics of radio communication. The more experienced reader will find the book useful in providing a comprehensive checklist of the planning and production processes.

The authors lay to rest the argument of education versus entertainment in social development broadcasting. They point out that although imparting essential information and motivating behavioral change are the basic objectives of social development messages, entertainment is necessary to attract, hold, and persuade large audiences. This idea of education *and* entertainment, or perhaps education *through* entertainment, is the basic theme of the book.

The chapters on planning effective radio communication are solid and comprehensive. The topics include identifying target audiences, assessing media habits, analyzing effective programming, scriptwriting, production considerations, and other basics. Various program formats are discussed, including news, group discussion, interviews and testimonials, entertainment, and the magazine format.

The discussion of audience identification would have been more useful if the authors had cited more variables for segmenting target audiences. The authors deny that their book represents a "marketing or advertising approach," but a review of social marketing techniques would be helpful in improving the section on audience analysis.

Many social communicators seem to run aground in mass media by moving from overall program objectives directly to message development. A critical intervening step covered in this book is a strategic understanding of *what* must be communicated (based on the program objectives) before attention is given to message execution.

The section on radio spot announcements is well done and would make good reading for social communicators and Madison Avenue copywriters alike. The advantages of spot announcements are outlined, along with the dos and don'ts of good preparation, copywriting, and production. A variety of examples are provided, and music, dialogue, celebrities, and humor ("beware of it") are discussed.

To illustrate the various formats and production techniques, small case histories are drawn from various countries (Kenya, Jamaica, Iran, St. Kitts-Nevis, Thailand, Colombia, Mauritius, the Philippines, India) using a variety of social issues, audiences, and radio formats.

The authors conclude with a useful chapter on pretesting message effectiveness among samples of the target audiences to be reached. Pretesting does not guarantee success, but it can reduce the chances of miscommunication, or even audience alienation, before time and expense have been expended on full production and on-air use. Audience comprehension is stressed as the single most important objective and the key to pretest assessments.

Recognizing the increasing variety of radio programming available to Third World listeners, it would have been worthwhile for the authors to address the need to assess the ability of a program or message to gain attention in a cluttered broadcast environment. This problem aside, the section of the book on pretesting is a good treatment of the need for pre-production assessment, and of affordable methods for collecting and assessing respondent data.

Another book in this Media Monograph Series, *Communication Pretesting*, provides a fuller exposition of pretesting (see *DCR* No. 26). Also, the Office of Cancer Communications/National Cancer Institute, Bethesda, Maryland, U.S.A. has useful materials on pretesting broadcast messages. Its Health Message Testing Service tests radio and television spot announcements among a variety of audiences in the United States. ■

Available for U.S. $3.75 from the Community and Family Study Center, University of Chicago, 1411 E. 60th Street, Chicago, Illinois, 60637, U.S.A.

Reviewed by William D. Novelli, President, Porter, Novelli and Associates, Inc., a Washington-based social marketing firm.

3

Radio Mathematics in Nicaragua. 16mm film, Academy for Educational Development, 20 minutes, color.

In 1973 the Nicaraguan government, Stanford University's Institute for Mathematical Studies in the Social Sciences, and the U.S. Agency for International Development undertook a joint project to use radio to teach the core mathematics curriculum to Nicaragua's rural primary school students. This film provides a comprehensive overview of that project. It covers:

- *the problem to be addressed:* To provide a consistently high level of teaching in a particularly difficult subject matter, one in which few primary teachers have sufficient training;
- *the process that was developed to adapt the curriculum:* While following the government's curriculum goals, the lessons stress mathematical skills applicable to rural life, and use the theory of distributive learning;
- *the design of the broadcasts:* Lessons are a well-paced mix of questions and responses, work and play, music and voice characters;
- *the atmosphere of the classroom:* Children respond to the radio speakers, work with bottle-tops as counters, sing along with radio songs, and continue to work with their teacher following the broadcast.

The film narration, which gives us the factual details of the project, alternates with the sounds of the classroom so that the viewer senses the excitement of this learning process.

Educators looking for innovative educational methods will find positive visual and evaluative answers to the three major questions posed by the project: Can radio assume the principal burden of teaching mathematics? Can children learn better from radio teaching than by traditional methods? Can radio teaching be cost-effective? ■

Available on loan from the Clearinghouse on Development Communication.

Reviewed by Judy Brace.

4

Media Women. 16mm film, UNESCO, 1977, 28 minutes 40 seconds, color.

Media Women, a UNESCO report filmed in Tunisia, Sweden, and Italy, describes the evolving role of women in media, focusing primarily on television and film. A growing number of women are becoming involved in media production and management; *Media Women* discusses their attempts to become accepted members of their profession.

The film emphasizes that, because they identify closely with the rights and roles of women throughout the world, women are led to new insights and new slants on familiar experiences, and they bring new perspectives and innovative ideas to filmmaking and television production.

Starting in Tunisia at the Conference of the Arab States Broadcasting Union, the film looks at how women in the Arab world, who have traditionally led secluded lives, are now taking a more active role in society. The question is, Will radio and television help them become a happy part of the community and at the same time help them maintain their cultural identity? The film provides no answer, merely an awareness that the question must be considered.

The camera then moves to Sweden, where women have been involved in media production for a longer period of time. In one example, a woman producer uses television to dicusss male and female role stereotypes. In other segments, two women filmmakers discuss women's role in film.

The film's final segment reports on a meeting of Film Women International, where women filmmakers met to discuss mutual problems, view each other's films, and develop fundraising strategies for the production and preservation of their work.

Media Women emphasizes women in media but is not judgmental, nor does it resolve the conflicts faced by women producers. It merely looks at women's struggles to become effective contributors in a traditionally male profession. ■

Available in English, Arabic, and French from UNESCO, Room 2401, United Nations, New York, New York 10017, U.S.A.

Reviewed by Kathy Alison, a communications and media production specialist for the U.S. Department of Agriculture.

The Village Mailman: The Potential of Postcards

by Benedict Tisa

Late last winter while I was working at home between assignments, the mailman, Al, came by on his usual run and handed me a packet of letters that included several postcards. Al offered the comment, "Your friend is sure lucky to be spending some time in the Caribbean." Later, when I sat down with the postcard from my friend, turning over the color photograph of palm trees and beach to read the handwritten message, it struck me all of a sudden that Al had been reading my mail. My first thought was that Al was prying, and I was irritated. The next day I questioned him about reading postcards. Without embarrassment he said sure, he glances at postcards; he feels they are public. After all, if a card is not meant to be public, it should be put in an envelope. Besides, the illustrations are a big come-on. The more interesting or attractive the illustration, the more his curiosity is aroused.

This incident set me thinking about the fact that, because they draw your attention, postcards might be used deliberately for educational purposes. When I became involved in an agricultural/functional literacy extension project in Bangladesh, I decided to see if postcards could be put to use as a motivational tool. In designing our postcard experiment, we took the following facts into consideration:

- Mail service existed in the area in which we were working, and though it was not regular (mail went from hand to hand until it reached the correct party), it was reliable.
- Postcards could be made by hand at nominal expense, and postage was not prohibitive.
- Receipt of mail in these villages was not a common occurrence. Therefore, it seemed likely that the delivery of a postcard — the fact that it would have to pass through several hands — could provoke some interest, curiosity, and discussion among the villagers.
- Extension workers were living in the villages and would be able, available, and certainly willing to explain the illustration and information on the postcards. The extension worker would quite naturally be drawn into a "mini-lesson" in this way.
- We believed that the cards would be motivational, and they might also be a form of recognition or reward for the recipient. Almost everyone likes to receive postcards.

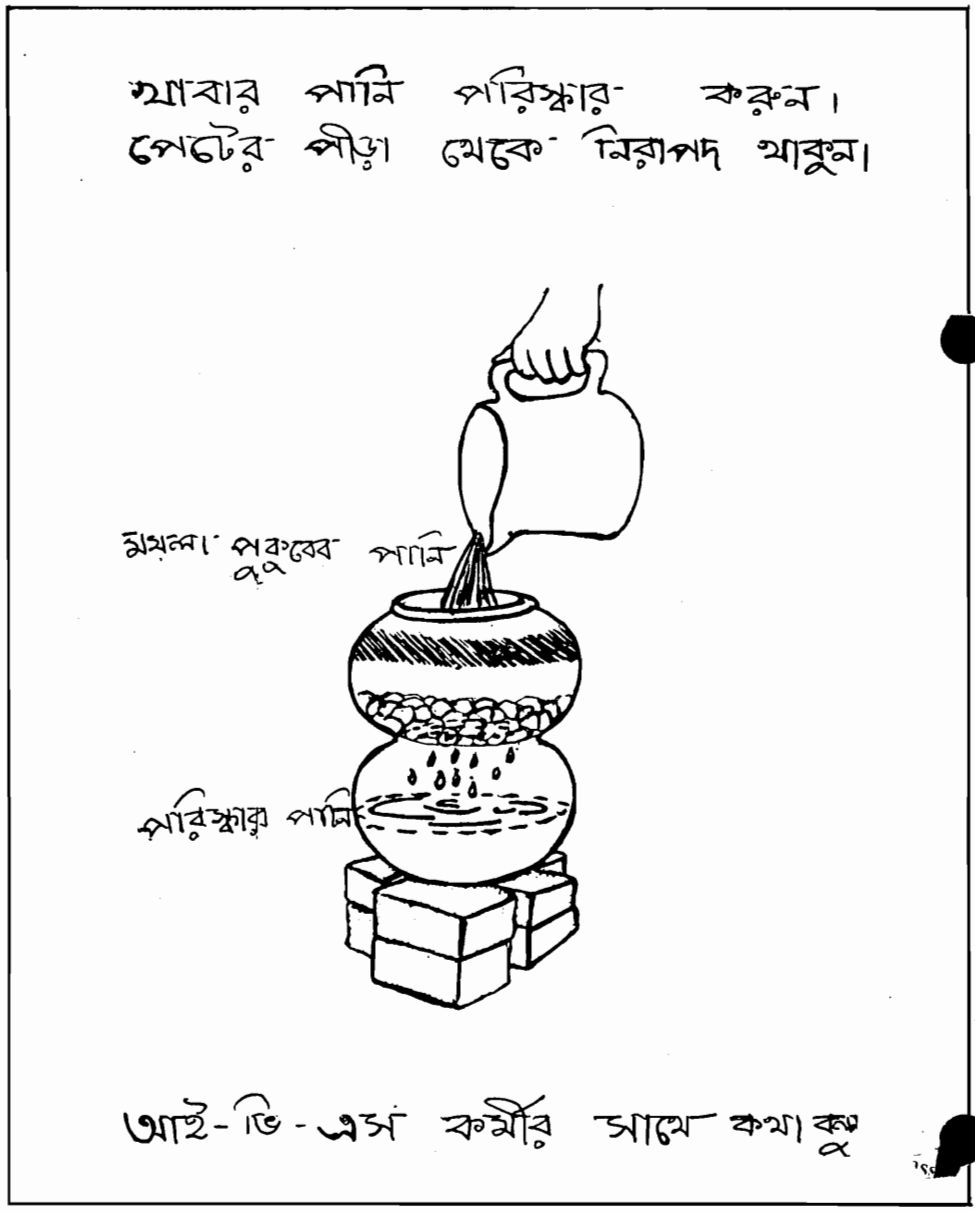
We decided to test the idea in three villages where a clean water campaign was in progress. Among the methods of water purification being taught was one which used simple, locally available materials for constructing a filter. Villagers were also being urged to use tube well water when it was available.

We designed two postcards, one illustrating the water filter, and the other illustrating women drawing water from a tube well. On the message side of each card we printed a few words that were being taught at the time in the functional literacy classes. We mailed the cards to the extension workers, having asked them to monitor the reactions, comments, and questions of the villagers — not just as they were addressed to the extension workers, but as the villagers talked among themselves. We wanted the extension workers to get an idea of how much gossip was generated and whether it was favorable.

The distance from the main post office to the test villages varied from 15 to [illegible] kilometers. We had figured that it would take a few days for the postcards to reach the extension workers and were surprised that it actually took a week, in one instance, for the card to reach its destination. We presumed (naturally) that it had stayed longer than normal in those hands through which it had to pass.

The reaction from the villagers was positive. On the whole, they expressed interest and curiosity. The extension workers were asked by several people to explain the illustration on the card and what the printed words meant. We were very encouraged by this trial run and were convinced that post-

(Continued on following page)



cards were potentially an effective motivational tool. More than that, they opened up the learning or awareness-creating process in a very natural way, causing the villager to approach the extension worker, rather than the other way around.

It remained for us to refine our strategies and determine how we might integrate postcards further into our program. At the time, the agriculture/functional literacy project was not in the implementation stage, so we could not make full use of postcards as motivational tools. Still, in the planning and testing phases, we were able to guess some of their potential. One idea involved sending postcards with words or phrases on them to the functional literacy students. The learner would bring these to the regular lesson, and they could then be used as a visual aid and learning tool in the classroom.

Postcards could also be used to introduce new or unfamiliar vegetables, with an illustration of the vegetable on one side and instructions for its cultivation on the reverse. A collection of such cards could become a kind of field notebook.

We agreed that it would be wasteful to use postcards merely as an open "broadcast" system without any follow-up, or without tying them into other elements or functions of the project. We also agreed that we would have to be careful not to overuse postcards and cause them to lose their effectiveness, novelty, and fun.

There is no doubt that postcards have potential. In the United States we have become quite sophisticated — even blasé — in our use of the mail for advertising, business, and education. Sometimes, however, the simple and common can be used to good effect in the appropriate situation. ■

If you have used postcards or other forms of correspondence for educational or motivational purposes in a development program, Ben would like to hear from you. Write to him at 616 Lees Avenue, Collingswood, New Jersey 08108, U.S.A.

Benedict Tisa is a nonformal educational communications consultant.

Development Communication Report, published quarterly by the Clearinghouse on Development Communication, is distributed free to over 7,000 development professionals.

A center for materials and information on important applications of communication technology to development problems, the Clearinghouse is operated by the Academy for Educational Development, a nonprofit planning organization, and supported by the Development Support Bureau of the U.S. Agency for International Development as part of its program in educational technology and development communication.

Readers are invited to submit typed manuscripts of no more than 1000 words and to send in photographs.

Selected Bibliography on Evaluation

Bachrach, Peter. "Evaluating Development Programmes: A Synthesis of Recent Experience," Occasional Paper No. 3 in a series on Experiences in Rural Development. 1977. Results of a systematic analysis of some 100 evaluations read and some 40 summarized in an attempt to determine how much is known about the costs of evaluation and what kinds of results can be expected from evaluation. Available from OECD Development Centre, 94, rue Chardon Lagache, 75016 Paris, France.

Bhola, H.S. *Evaluating Functional Literacy.* 1979. One of a series of training monographs on literacy in development, this volume presents an integrated approach to making evaluation *operational* within functional literacy programs and projects. It deals with all aspects of evaluation, from the determination of evaluation policies to the design of needed tools and instruments, from data collection to the use of data to make informed decisions. Available in Spanish, French, Arabic, and English from the International Institute for Adult Literacy Methods, P.O. Box 1555, Tehran, Iran.

Clark, Noreen, and McCaffery, James. *Demystifying Evaluation.* 1979. A manual for conducting a training workshop on evaluation, the manual itself derived from a workshop conducted for staff members of nonformal education programs in Kenya, Ghana, and Ethiopia in 1977. Available from World Education, 1414 Sixth Avenue, New York, New York 10019, U.S.A.

Dulansey, Maryanne L., editor. *Approaches to Appropriate Evaluation: A Report* on a series of workshops on evaluation sponsored by the Committee on Development Assistance of the American Council of Voluntary Agencies for Foreign Service. Available from the Technical Assistance Information Clearing House, 200 Park Avenue South, New York, New York 10003, U.S.A.

Educational Testing Service. *A Manual for the Analysis of Costs and Outcomes in Nonformal Education.* 1979. Presents what is known about cost-effectiveness and cost-benefit analysis for people who are responsible for planning, administering, and evaluating nonformal education projects in less developed countries. Available from the International Office, Educational Testing Service, Princeton, New Jersey 08541, U.S.A.

Jamison, Dean T.; Klees, Steven J.; and Wells, Stuart J. *The Costs of Educational Media: Guidelines for Planning and Evaluation.* 1978. Presents a methodology for the cost evaluation of ongoing educational projects and illustrates its application by examining the cost structure of instructional radio and television projects, particularly those in developing countries. Includes nine cost case studies. Available from SAGE Publications, 275 South Beverly Drive, Beverly Hills, California 90212, U.S.A.

Morris, Lynn Lyons, editor. *Program Evaluation Kit.* This set of books, intended to assist people who are conducting evaluations of educational programs, includes the following titles:
The Evaluator's Handbook
How to Deal with Goals and Objectives
How to Design a Program Evaluation
How to Measure a Program Implementation
How to Measure Attitudes
How to Measure Achievement
How to Calculate Statistics
How to Present an Evaluation Report
Complete kit or individual volumes are available from SAGE Publications.

Perraton, Hilary, editor. *Alternative Routes to Formal Education: Distance Teaching for School Equivalency.* Baltimore and London: Johns Hopkins University Press, forthcoming. Results of research sponsored by the World Bank on the cost effectiveness of distance teaching for school equivalency. Includes case studies from Brazil, Malawi, Mauritius, Korea, Kenya, and Israel. For information on availability contact Shigenari Futagami, The World Bank, 1818 H Street, N.W., Washington, D.C. 20433, U.S.A.

(Continued from page 4)

tests should probably be understood in the same perspective as operational projects in their early years.

Thus, there is probably no consistently adequate mechanism for influencing major decisions about a project with research done on that project. Planners are restricted to gathering data that can frame the audience and the environment in which the project must function. Beyond that, they must apply available theory and make inferences on the basis of data gathered on related projects. As projects gain momentum, major changes in trajectory are difficult to achieve.

Nonetheless, the social researcher can take on additional important roles. There are minor changes in course likely to be achieved through an efficient management information or monitoring system. The social scientist can help identify the nature of information that can be used by the operating system, the appropriate instruments for gathering the information, the data-gathering logistics, and the process through which the raw data will be translated into specific recommendations.

However, it is imperative that any regular gathering of information be limited to topics that have a specifiable value each time they are reported. Operating systems will ignore information if there is no time or mechanism to make use of it. Particularly if one is utilizing frequent monitoring cycles, feedback may of necessity be limited to information about details of implementation: how many teleclasses broadcast, how many television sets broken, how many workbooks delivered.

Less mechanical questions might be handled in a different way. The evaluation team might take particular problems that have surfaced and focus on them one at a time: Are teachers complaining that the mathematics teleclasses are going too quickly for rural seventh graders? How well do the classroom teachers of Spanish handle the activities recommended in their teachers' guides to reinforce the telelesson?

In each case, the users of the evaluation results are specified, and the problem is carefully defined with them. Then an appropriate research design is developed, and data collected and reported. In each situation some reasonable solution to a problem is reached and the evaluation group takes on a new problem, returning to the old one only when it seems necessary. In the end, no evaluation activity should be undertaken the results of which are likely to produce recommendations that cannot or will not be utilized. ■

Robert Hornik is associate professor at the Annenberg School of Communications, University of Pennsylvania, Philadelphia, Pennsylvania 19104, USA.

How Can You Contribute to CDC?

- If you are in Washington, come to the Clearinghouse, use the Clearinghouse collection, and visit with us. This helps us to stay in touch with what is happening in the field.
- Write and tell us about your projects—your experiences are valuable to your counterparts in other countries.
- Send us regular copies of your publications, papers, and reports. These are valuable to us as we work to strengthen the development communication network worldwide, and they will be used by visitors who come to use the Clearinghouse collection for research in planning their own projects.
- Send us articles for publication in *DCR*. We are planning future issues on literacy and communication for the urban poor.

Conference on World Communications

"World Communications: Decisions for the Eighties" is the title of an international invitational conference sponsored by the University of Pennsylvania's Annenberg School of Communications, May 12-14, 1980, in Philadelphia. Policy makers, scholars, and managers will come together to explore the foundations of judgment and action in the broadest technical, social, cultural, and political contexts. Interdisciplinary task groups will be formed to develop policy recommendations. Conference fee is $300. A limited number of grants is available. For information contact the World Communications Conference, Annenberg School of Communications, University of Pennsylvania, Philadelphia, Pennsylvania 19104, U.S.A.

M.A. in Communication and Development

The Department of Communication at Stanford University offers a Master of Arts degree in communication and development. The program is intended to provide exposure to communication theory, social research methods, statistical analysis, development communication project design, programming, and evaluation research.

The program usually requires three quarter-terms (nine months) of full-time course work, followed by a period of field research in a developing country, and by about two terms of data analysis and thesis project writing.

The Stanford program is expected to be of greatest value to candidates for/from Latin America, Africa, and Asia who are presently engaged in communication and development programs, or who are affiliated with universities or other organizations conducting communication research and/or teaching. Applicants must be university graduates. Competence in English is required, as is completion of the Graduate Record Examination. Applications must be submitted by January 1 for the academic year beginning the following September.

Further information about the program may be obtained from Professor Bella Mody, Institute for Communication Research, Stanford University, Stanford California 94305, U.S.A.

Summer Course on Communication Planning

The Department of Communication Arts at Cornell University will conduct a three-week course on "Communication Planning and Strategy in Rural Development," July 20-August 8, 1980. The course, for policy level officials and decision makers in agriculture, health, nutrition, education, and other sectors related to development, is designed to assist participants in systematically incorporating communication components into their programs.

The course will deal particularly with methods for mobilizing resources and developing strategies for communicating with persons targeted as beneficiaries of rural development programs. Attention will be given to linking communication with program policy and objectives; orchestrating audiences, channels, and content; implementing programs; and measuring results, with emphasis on the support and maintenance of decentralized communication operations and the development of community participation.

Course costs will be U.S. $650 for tuition, fees, and materials, and approximately U.S. $400 for room and board. For further information contact Dr. Royal D. Colle, Department of Communication Arts, Cornell University, 640 Stewart Avenue, Ithaca, New York 14850, U.S.A.

In this issue . . .

Development Communication Report

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April 1980
No. 30

The Elusive Goal of World Literacy

Mass Campaigns May Be UNESCO's Next Approach

by H. S. Bhola

Literacy is accepted today as one of the basic human rights. The Universal Declaration of Human Rights, adopted by the United Nations in 1948, proclaimed that "everyone has the right to education." For the world's millions of illiterate adults this is translated most often as the right to literacy.

Despite the steps that have been taken by many countries to promote literacy, however, the problem of illiteracy is growing. While the expansion of schooling has managed to decrease the illiteracy *rate* of the world adult population, education has not kept pace with high population growth rates. Thus the *total number* of adult illiterates continues to increase. In 1970, there were 742 million illiterate adults in the world; in 1980, there are some 814 million; and in 1990, there will be 884 million, unless massive measures are undertaken in the meantime to eradicate illiteracy. If we add to these statistics the 200 million children who have no access to schools, it is fair to say that about one-fourth of the world's current population is illiterate.

Literacy has been a major concern of UNESCO since the organization's founding in 1946. UNESCO's most recent major literacy effort was the Experimental World Literacy Programme (EWLP), carried out from 1967 to 1973 in collaboration with UNDP in 11 countries. The EWLP was built around the concept of "functional literacy" — the idea that "the very process of learning to read and write should be made an opportunity for acquiring information that can immediately be used to improve living standards. . . ." (Final Report of the World Congress of Ministers of Education on the Eradication of Illiteracy, Tehran, 1965).

The results of the initiatives undertaken by UNESCO for the eradication of illiteracy, however, have been mainly qualitative. It now seems clear that if we are to aim seriously for the eradication of illiteracy, we must undertake international actions that will link plans for the attainment of universal primary education with the launching of a world campaign for literacy. The strategy must be equal to the task.

Experience thus far has shown that there are several factors vital to the success of literacy programs:

- National political resolve.
- Dynamic social and economic structures — literacy campaigns "are more likely to succeed in a society on the move towards greater social justice."
- The awareness and participation of the population.
- Plans for literacy activities linked with the educational system as a whole and geared to economic and social development.

These conditions are closely interconnected; "they express a will, a possibility, and a desire for change which find expression in a planned effort." (UNESCO Document 20 C/71, 25 August 1978)

The sum of our experience suggests that the strategy for combatting illiteracy must

(Continued on page 2)

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Is Literacy the Only Road to Learning? Basic Education by Radio Is an Alternative

by Dwight W. Allen and Stephen Anzalone

Despite the concerted efforts of the last two decades and a generally declining rate in the percentage of illiterates in the world's population, the absolute number of illiterates continues to rise. The illiterate population increased by 72 million people during the 1970s alone. With the lingering discouragement over the results of UNESCO's large-scale Experimental World Literacy Programme (EWLP), it might appear that the world is ready to give up on literacy.

And maybe we *should* give up on literacy. Has our objective ever really been literacy? Our objective has been to make a reality of the right of every individual to education and bring to all mankind the global knowledge of twentieth-century society, together with the skills and resources to use such knowledge to improve the quality of life. But our conceptualization of the basic education guaranteed every individual has crystallized around the pole of literacy. Literacy, if not synonymous with basic education itself, clearly has been treated as the vestibule to all other learning, a mandatory first stage in the learning process for every individual in every society.

If basic education for the too-many millions of poverty-stricken people living predominantly in the rural regions of the developing countries must hinge on literacy, the future looks bleak. There is no escaping the fact that the operational record of success with literacy programs has been dismal. We have been able to help too few people to become literate, at costs often monumentally uneconomical, and where there have

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A publication of the Clearinghouse on Development Communication
Supported by the Development Support Bureau of the U.S. Agency for International Development

World Literacy

(Continued from page 1)

involve national mass campaigns, composed of a series of determined actions within a well-defined time span, with total commitment of the nation's will, and with resources equal to the needs.

The ICAE/UNESCO Study

Many nations, particularly those that have experienced profound social and economic changes and those that are determined to make rapid progress, have conducted nationwide literacy campaigns to encourage and facilitate modernization. In order to capitalize on the experience gained from these campaigns, UNESCO has commissioned the International Council for Adult Education (ICAE), in Toronto, Canada, to prepare a comparative study of the role of the successful national literacy campaigns of the twentieth century in the development of the nation in which each was conducted.

The primary resource material for the ICAE/UNESCO study will be a series of case studies of significant mass literacy campaigns, representing a wide variety of historical, political, social, economic, and cultural settings. The countries selected for the case studies are Algeria, Brazil, Burma, China, Cuba, Korea, Somalia, Tanzania, the USSR, and Vietnam. While these ten countries will constitute the basic pool of data, experiences elsewhere will not be excluded from the analysis. (The recent mass campaigns of India, Kenya, and Iraq could not be included in the study because it is still too early for data to have accumulated and results analyzed.)

Because of the dearth of reliable documentation, the case studies were specially commissioned within the framework of the ICAE/UNESCO study. Each of the selected countries was invited to contribute a case study and asked to emphasize certain aspects of the campaign, for example:

Algeria

1. The objectives of the campaign were socialist and sought to consolidate national independence, suppress exploitation, and foster the social development of the individual.

2. The campaign comprised three subcampaigns: a mass campaign that stressed political, social, and economic education while focusing on the three Rs; a functional literacy campaign in the agricultural sector; and a functional literacy campaign in the industrial sector.

3. The campaign strategy was used to maintain a balanced emphasis on both a selective and a mass approach.

4. Literacy courses in the self-managing agricultural and industrial sectors have been integrated into the work schedules.

Brazil

1. The government's commitment to the campaign has been strong, based on the belief that literacy must serve as the foundation for modernization. In 1979 more than 100 million dollars were spent on literacy programs.

2. Highly sophisticated administrative and technical systems that were established centrally were complemented by decentralized implementation strategies.

3. The single national primer used to teach functional literacy was designed to elicit and to be supplemented by locally generated and locally responsive materials.

4. By offering a 12- to 18-month integrated program of instruction equivalent to one to four years of schooling, the literacy campaign was directly linked with the formal education system.

5. The literacy organization, MOBRAL, has used whatever would work in terms of teaching methods and materials, including television, radio, conventional classroom teaching patterns, self-instruction, and each-one-teach-one approaches.

Burma

1. The campaign is truly a "mass movement," in that the government of Burma offers only advice on means of increasing "organizational power," but no special financial allocations. The costs involved in becoming literate are incurred by the people who receive the training.

2. Four-tiered organizational structures with personnel at the central, divisional, township, and grassroots levels have been established. These have both horizontal and vertical integration among the three parallel systems of the government, the party, and the literacy committee.

3. Although the campaign is national in its vision, it is implemented in increments. An area is targeted, the population is motivated and mobilized, and the campaign is launched, lasting until the populace of that area is literate.

4. The literacy classes initially stress reading, writing, and arithmetic, with functionality and work-oriented aspects appearing in the post-literacy phases.

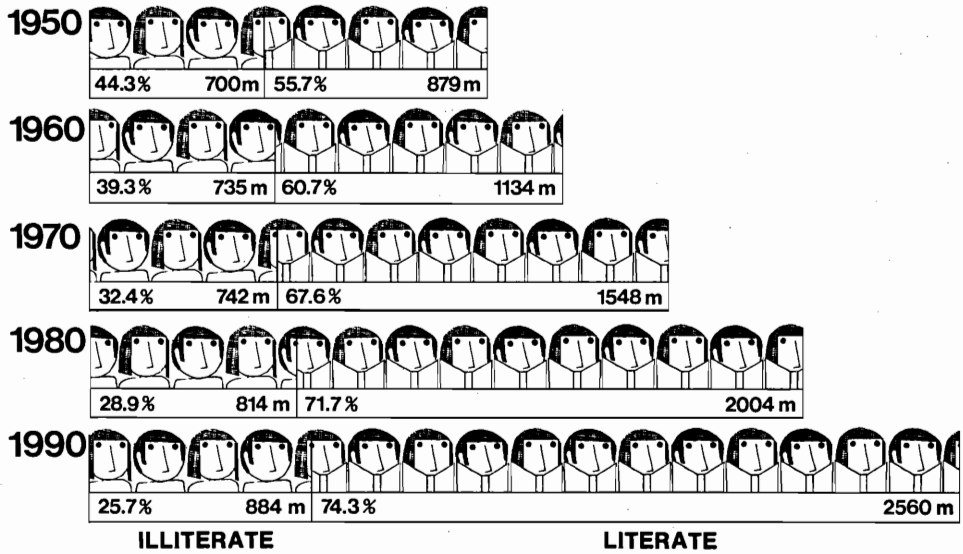
5. The complete attainment of literacy is ascertained by the use of rotating evalua-

(Continued on page 3)

A Note on Literacy Statistics

Most of the statistics referred to in this issue of *DCR* are UNESCO statistics and projections. UNESCO qualifies its literacy statistics in several ways. First, there are gaps in the data available from certain nations, and UNESCO overcomes these by supplying estimated figures. Second, UNESCO's statistics are based on updates or projections of the results of surveys (sometimes made at long intervals), on observed trends in the educational system, and on the demographic estimates and projections of the United Nations. This method is subject to fairly wide margins of error in that it may not take into consideration the results of newly launched out-of-school programs, accelerations or improvements in school enrollments, or changes in population trends. Third, the concept of a literate person varies widely from country to country, ranging from the ability to decipher a simple text to the completion of full primary schooling. Given these reservations, the statistics are provided to set a context for discussion.

Estimated percentages and numbers (in millions) of literate and illiterate adults in the world, age 15 and older.



Education has not kept pace with population growth; therefore, while the percentage of the adult population that is illiterate has declined, the total number of illiterate adults continues to grow.

graphics by Timothy Bradford Ward

tions conducted by neighboring villages on one another.

China

1. The motives for the campaign included the diffusion of the Marxist philosophy, the encouragement of political socialization, the destruction of class barriers, and the economic development of the state.

2. The literacy campaign was intertwined with the reformation of the language and the simplification of the writing system.

3. The literacy classes became linked with a more or less formalized system of spare-time education.

Cuba

1. The campaign was massive and quick, lasting only eight months (in 1961) and making literate 90 percent of the previously illiterate population.

2. The campaign was charged with the dual functions of eradicating illiteracy and integrating the people into post-revolutionary Cuba.

3. During its course, the literacy campaign was under physical attack by counter-revolutionaries.

Tanzania

1. The literacy campaign was the result of the national political will, with firm support from the president and the ruling party.

2. The results of the pilot projects, which tested fieldwork, training, and pedagogical procedures, were used to conduct the full campaign.

3. Elaborate systems were established for training personnel and producing instructional materials, especially using the workshop mechanism.

4. All elements of the campaign's administration were well coordinated.

5. Four levels of achievement were conceived for those attempting to become functionally literate, with a national testing program to identify the level of achievement.

6. Recognition of the need for universal primary education emerged as a consequence of the literacy campaign.

7. The campaign is known all over the world for the excellent help it got from Radio Tanzania and the Institute for Adult Education in Dar es Salaam. The radio campaigns on nutrition and health infused great vigor into the literacy campaign.

Vietnam

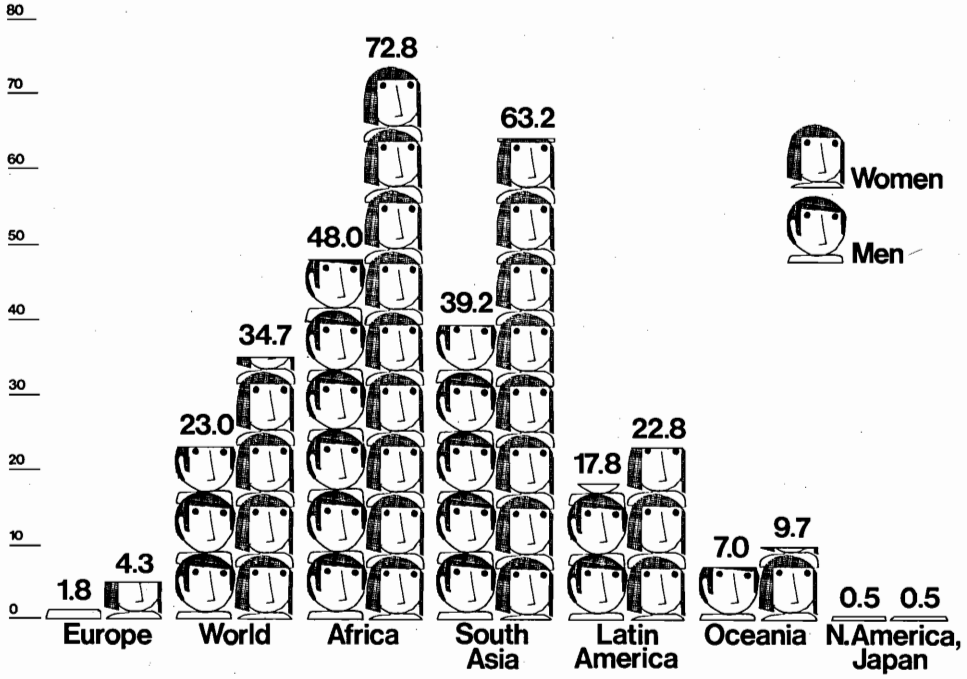
1. The campaign was directly related to the Vietnamese culture and social reality.

2. Language reform and the democratization of the language were two of the noteworthy elements of the campaign.

3. A major policy of the literacy campaign was its integration with different kinds of post-literacy programs and with the formal primary education system.

4. With the literacy campaign continuing under the conditions of war, it was characterized by mobility, flexibility, and innovativeness.

Percentage of the adult population that is illiterate, by sex and major geographic area.



The illiteracy rate for females is always higher than that for males. The greatest differences between the rates occur in the areas with the highest overall illiteracy rates, namely Africa and South Asia.

The Final Report

The project's tentative schedule calls for the completion of the individual country case studies by May 31, 1980. At this point, H.S. Bhola, the Project Director, will proceed to compare and analyze the political, economic, sociological, and psychological aspects of the campaigns. Conclusions will be offered in the final report in a summary memorandum to policy makers and planners. Pending acceptance by UNESCO, the final report, including distilled versions of the case studies, will be published in English, French, Spanish, and possibly Arabic, and presented at a Dissemination Seminar tentatively planned for Udaipur, India, in December 1981.

In its function as a policy brief, the final report will give policy makers and planners arguments to justify the promotion of literacy and the allocation of scarce financial resources to this task. It should also present the mass national campaign as a promising and preferred alternative. As an organization manual, the report should make clear the social, economic, and political conditions that would make a country ripe for a national literacy campaign. It should communicate to planners and organizers a real sense of the level of response and the depth of commitment necessary for organizing a national literacy campaign. And finally, it should provide general suggestions, based on evidence, for the actual organization of literacy campaigns. Let us hope, for the sake of the millions who do not wish to remain illiterate, that experience will once again prove itself a good teacher. ■

For further information contact H.S. Bhola, Indiana University, School of Education, Bloomington, Indiana 47405, U.S.A. Portions of this article were adapted from the final report on a seminar held in December 1979 in conjunction with this project, sponsored by the German Foundation for International Development. This report, "Literacy Campaigns in the Context of Development," was edited by Gary Brown and is available from Dr. Josef Muller, Education and Science Branch, German Foundation for International Development, Simrockstrasse, 1, 5300 Bonn, 1, Federal Republic of Germany.

H.S. Bhola, professor of education at Indiana University, was editor of the recent series of training monographs, *Literacy in Development*, published by the International Institute for Adult Literacy Methods in Tehran, Iran. He is director of the ICAE/UNESCO project, and will write the final report to UNESCO.

It can be estimated that there are at present probably 800 million adults, i.e. approximately three adults in every ten, who can neither read, write, nor do a simple sum. Sixty percent of these illiterates are women, and their number is increasing faster than that of the opposite sex.

UNESCO, August 1978

Learning by Radio

(Continued from page 1)

been no real prospects for providing the resources to maintain these skills.

It might be recalled that the EWLP was aimed at one million adults, and only some 120,000 reached literacy. Other programs have not even been this successful. High dropout rates in literacy projects are compounded in succeeding years when successful completers lapse back into illiteracy. This is often painfully dramatic. In one Asian country it was found that the majority of pupils finishing four years of primary education became illiterate again within three years. (Manzoor Ahmed, *The Economics of Nonformal Education: Resources, Costs and Benefits.* New York: Praeger, 1975.)

The high dropout rate tends to produce economic anomalies. Ahmed cites a case where the high dropout rate (49 out of each 50 failing to complete) resulted in a cost per literate of $1,600 instead of the $32.80 that would have occurred had all completed. Even more successful programs are still not cost-effective.

We must devise a program of basic education for the rural masses not being effectively served by schools, and we must reappraise the role of literacy in such an undertaking. We should consider the possibility that a comprehensive program of radio education may be an alternative to literacy for the rural poor.

The Legacy of Literacy

In today's world the uses of literacy are many — and they are obvious. Perhaps this reality has been so overpowering that it has caused us to believe that literacy can be and needs to be used to do anything and everything. It is not surprising that our development efforts reflect the seeming omnipotence of literacy. Development strategies have linked the introduction of new agricultural methods to literacy among farmers. Literacy, it has been argued, is needed to make it possible to read farming pamphlets or simply to facilitate interaction with agricultural extension officers.

This belief is so widespread that the counterargument became, in at least one case, the topic of a specific research investigation. A study of farmers in Brazil found no direct relationship between literacy or level of schooling and behavior conducive to development. It was shown that literacy or level of schooling does not influence contact with agricultural technicians and only moderately influences exposure to other (nonprint) sources of agricultural extension. (Frederick C. Fliegel, "Literacy and Exposure to Instrumental Information Among Farmers in Southern Brazil," *Rural Sociology,* Vol. 31, No. 1, March 1966.)

The necessity of literacy as a prerequisite in the development process has been disputed by other observers as well. Hornik, Mayo, and McAnany write:

> Up until quite recently, literacy was regarded as the fundamental human skill without which modern knowledge could not spread; without literacy, it was feared, rural communities would remain isolated and underdeveloped. Literacy is still considered a vital factor in building self-esteem and in motivating rural people to adopt other "modern" behaviors and attitudes, but most development experts seem to agree that substantial progress can be made by rural people even if they remain illiterate.[1]

From this evidence, the authors wish not to conclude that literacy is not important in the development of education or society, nor that any country should abandon its efforts to ensure the literacy of its citizens. Rather, we simply wish to contend that basic education does not necessarily require literacy as its starting point.

Basic Education

A particular notion of "basic education" has been popping into international educational discussion during the past few years. Today's basic education looks not fundamentally different from yesterday's functional literacy, perhaps only slightly dressed up to ensure that it will command a place in rural development strategies. The verbal feint might reflect recognition that universal primary education is not going to be realized in the poorer countries anytime in the near future, and that children will have to join adults in out-of-school functional-literacy-type programs.

The recent concern for basic education signals, at least tacitly, the desire for a shift in direction away from the failures of the past. But this does not go far enough. We will need to redefine what is meant by basic education. A good starting point is the definition advanced by the World Bank:

> Basic education is an attempt, despite severe resource constraints, to meet the needs of substantial portions of the population who do not have access to even minimum educational opportunities. It is a supplement, not a rival, to the formal educational system, and is intended to provide a functional, flexible, and low-cost education for those whom the formal system cannot reach or has already passed by. . . . The objectives and content of basic education are functionally defined in terms of "minimum learning needs" of specially identified groups, and not as steps in the educational hierarchy. . . .
>
> A recent study prepared for . . . (UNICEF) has defined "minimum learning needs" for individuals as a threshold level of learning required for participation in economic, social, and political activities. These essential learning needs include *functional literacy* [our emphasis] and numeracy (skill in using numbers), knowledge and skills for productive activity, family planning and health, child care, nutrition, sanitation, and knowledge required for civic participation. They can be operationally defined as "minimum learning packages" to be attained by all, comparable to the term "poverty line" which refers to minimum family income.[2]

The chief objection to the World Bank's definition is the ascription of functional literacy as the first of several minimum learning needs. This is certainly in keeping with tradition, and the World Bank is not alone in this regard. We might naturally expect that, unless literacy is explicitly given a different role from the past, then literacy as a minimum learning need in a basic cycle of learning will continue to be the starting point and the currency necessary for all other learning. We find ourselves pointed at the same historical impasse where our only option remains the same — some combination of expanding primary-school enrollment, multiplying the number of functional literacy projects, and hoping that in the process literacy can be made functional for everyone by a thus far unforeseen explosion of printed materials with sufficient fallout to paper the remote rural regions. Again, we are peering through the same keyhole where literacy is the key to learning. This learning

Nearly three-quarters of the world's illiterates live in Asia, approximately 20 percent in Africa, and 5 percent in Latin America. More than 400 million illiterates, i.e. the majority of the world illiterate populations, are to be found in only 11 countries, 7 of which are Asian. By 1980, 23 countries will have an illiteracy rate that is higher than 70 percent, including 18 African and 4 Asian countries.

UNESCO, August 1978

Research has demonstrated that the problems facing literacy programs are not those of pedagogy or sophisticated methodology. They are largely organizational, administrative, and structural, stemming from the lack of mechanisms to train literacy teachers, distribute learning materials, implement and support effective teamwork at the project level . . . .

The World of Literacy

1. Robert Hornik, John K. Mayo, and Emile McAnany, "The Mass Media in Rural Education," in *World Book of Education 1974 — Education and Rural Development,* Eds. Philip Foster and James R. Sheffield (London: Evans Brothers, 1973), p. 80.

2. *Education Sector Working Paper* (Washington, D.C.: World Bank, 1974).

is likely to be preempted as before because those people unable to become or stay literate are not able to acquire or maintain the currency necessary for continued learning.

The authors do not believe that literacy should be considered a *minimum* learning need at all — however fundamentally important literacy always will be in places where its use is functional. To define literacy as an "educational poverty line" in a traditional society is to set this line neither too high nor too low but rather through the wrong criterion, where it can block access to the information and skills needed for well-being and development. Instead of literacy being defined as a prerequisite to basic education or as the currency of the learning process, literacy might find its proper place at some midpoint in the learning process when access to print materials becomes a reality, when a person prepares to enter a formal system of education, or when literacy becomes truly functional to his or her life.

The issue of literacy aside, the World Bank's suggestion of minimum learning needs provides a useful outline of the possible content of basic education programs. The authors' purpose here is to propose that in the coming discussion on basic education the connection of literacy to this undertaking be treated as problematic. We believe there are alternatives. We feel strongly that a comprehensive program of radio education should be developed as the principal means of delivery for basic education.

Basic Education by Radio

The technical feasibility of radio for mass education is not in question. Radio is cheap, simple, reliable, and appropriate. In 1972 the International Commission on the Development of Education noted the promise of education by radio; it is surprising that a major proposal for the use of radio for basic education has not already been advanced. The commission notes the following:

> Radio is the only advanced communication technique which has found its proper place in developing countries. Where conditions have permitted, it has become well established and widespread. Yet, it seems to us that insufficient educational use is made of this virtually universal method of distribution. People often seem to be deterred by the reputedly greater efficiency of other media which, however, have the major defect, compared with radio, of being unable to hope for such widespread distribution — or anything like it — for a long time to come. The very low cost and adequate reliability in all climates of miniature transistor radios mean that radio broadcasting should more and more be recognized as a particularly suitable medium for educational purposes.[3]

Today, the number of radios per inhabitant exceeds the number of copies of daily newspapers per inhabitant, both for the developing world and for the world as a whole. The implications of the spread of radio are underscored by Wilbur Schramm:

> If there is a medium for nonformal education, it is radio. The reason for this is illustrated by Paul Theroux's study of rural radio in Uganda, in which he reported that whereas 87.8 percent of the families he surveyed have no electricity, 86.3 percent have radios.[4] In other words, radio is the one long-range, easily deliverable medium that overleaps the commonest barriers to instruction in remote areas.

The capabilities of radio used in instruction have been clearly demonstrated, for diverse purposes and in diverse settings. Students in Japan can obtain an entire secondary education by radio. In the United Kingdom, radio plays an important part in the offerings of the Open University. Colombia's Radio Sutatenza is often cited as an example of the potential impact of radio in adult education. The Nicaraguan Radio Mathematics Project has reported great success. Other examples abound: successful language teaching and elementary education projects in Mexico, radio farm forums and adult-listening clubs in various African countries, the widespread use of educational broadcasting for school audiences in Thailand, the Radio Mensaje project for farmers in Ecuador, and the out-of-school offerings of Radio Santa Maria in the Dominican Republic.

But despite radio's widespread and effective use in education, systematic development of its potential has been thwarted by our expectations — we have not really expected much from radio. Too often, radio has been used unimaginatively in a supplementary role, modeling rather than developing according to its own dynamic. As a result, the character of radio education tends to reflect traditional, classroom-like education adapted to the medium of radio, and not an exercise in mass communications oriented to education. Program formats have often been restrictively monotonous and ill-suited to radio's special characteristics. The immediacy and vitality of radio have been lost with the reproduction of the dull "teacher monologue" format over the air waves. A new mandate for radio education is sure to find the failures of the past as instructive as the successes.

Looking at the proven worth and even greater promise of radio in instruction, the authors contend that basic education can be delivered in a content-rich and economically viable way by radio. The most important feature of such a program of basic education is that learning would be chiefly an oral process, parallel to ways that social transactions take place in traditional societies. Literacy would not be a prerequisite to learning by radio. But literacy instruction would, of course, be included for those people able to become literate. The essential point, however, is that *basic education would continue rather than begin with literacy.* Literacy would no longer be the keyhole to the learning process.

The radio education program would offer a curriculum core appropriate for multiple clienteles. A country's broadcasting capabilities would be able to accommodate a variety of simultaneous offerings, in a diversity of formats, to make provision for different levels of audience ability and involvement. Priority must be given to the minimum learning needs of rural adults and children not in school. It is also desirable that the radio programs be used in such a way as to interface with the regular school curriculum. Not only would this lead to curricular improvements in the school, it would help bridge the gap between learning in the school and home environments.

> *Mass media expert Henry Cassirer . . . noted that the enormous scale of illiteracy cries out for literacy instruction using modern technology but that relatively little headway is being made. The reason is that the scope and objectives of mass media do not correspond to those in functional literacy instruction. Mass media are economic only when applied on a massive scale. Functional literacy teaching frequently requires specific content.*
>
> The World of Literacy

We see radio education not as an "add-on" to the nonformal system of education but rather as a vital component reordering the system itself. The development of radio education's functional capacity must be assigned highest priority in basic education strategies. To be effective, radio education must be self-contained — again, a curriculum core addressing the myriad learning needs of multiple clienteles. As a self-contained component of nonformal education, basic education by radio should offer learning continuity and make it possible for some learners to go beyond minimum learning needs to literacy and for some to gain access, entirely via this nonformal route, to formal secondary schooling.

A basic education radio program has the potential to develop the outreach to reorder the entire system of nonformal education. This derives from our view that nonformal

(Continued on page 11)

3. E. Faure, et al., *Learning to Be* (Paris and London: UNESCO-Harrap, 1972).

4. Paul Theroux, *Education by Radio: An Experiment in Rural Group Listening for Adults in Uganda,* Makerere Adult Studies Center, Occasional Paper No. 6 (Kampala, Uganda: Makerere College, undated).

Using Economic Incentives for Literacy Motivation

by Mary C. Rainey

The international development community is giving renewed attention to investigating the best way to aid literacy efforts in the developing world. Recognizing that the growing number of illiterates tends to impede development efforts in all sectors, planners are giving high priority to literacy training. In line with this trend, Creative Associates, Inc., is conducting the Literacy Oriented Functional Education Project, a three-year research study to explore what effect the promise of increased economic well-being has on literacy motivation. The project, sponsored by the U.S. Agency for International Development, will test ways to use economic incentives to enhance literacy motivation among out-of-school youths and adults participating in skills training programs.

Broadly speaking, individuals are motivated to become literate by a combination of political, cultural, and economic incentives. Political incentives tend to prevail in countries where the literacy program is established through a directive initiated and implemented by a national leader, as in Cuba and Somalia. (See page 8 for a description of the Somalia campaign). Cultural incentives to become literate can be historically rooted in a culture, as in China, where literacy is valued in itself. Economic incentives can be seen as those that hold the promise of a better quality of life, as literacy gives the individual greater access to resources. A better quality of life may result from a better job; from an increased ability to participate in modernizing activities through access to information in newspapers, instructional booklets, educational pamphlets, and posters; or merely from an increased capacity to survive in the marketplace among those who are literate and who use their skills to their own advantage.

Other programs and projects have previously addressed the question of how to use economic incentives systematically in literacy programs. For example, the relationship between literacy and economic productivity was a major focus of the UNESCO/UNDP Experimental World Literacy Programme (EWLP), conducted from 1967 to 1973. However, the EWLP did not provide a clear, proven set of recommendations that governments and donor agencies could use to plan future efforts. Energies were concentrated, not on testing established methods, but on letting them evolve through practice.

Following the Experimental World Literacy Programme, UNESCO, the community of private voluntary organizations (PVOs), and host national groups have continued to support smaller scale research studies and pilot programs in literacy. These efforts highlight the need to be sensitive and responsive to the *motivation* of learners. A question emerging from these efforts is to what extent economic improvement affects the acquisition of literacy, that is, will the promise of economic improvement serve as a strong incentive for adults and out-of-school youths in literacy training programs?

The research being conducted by Creative Associates will focus on identifying the strengths of economic incentives in terms of costs and benefits to individuals participating in skills training programs. It will consider differing perceptions of the value and utility of becoming literate on the part of subsistence, self-employed, and salaried workers.

In order to obtain a sample of people who have already shown some economic motivation, the study will select its subjects from individuals registered voluntarily in skills training programs in two project sites, one in Latin America and one in either Africa or Asia. The study will exclude individuals participating in programs that reward attendance (with monetary payment or food, for example), that are part of a mass literacy campaign, that focus on religious content, or that achieve enrollment through coercion (by fining absences, for example).

A major premise of this study, in contrast to the EWLP, is that *literacy accompanies or follows, rather than precedes, development.* It proposes that motivation toward literacy increases when the potential learner perceives an opportunity to increase his or her economic productivity with the help of literacy and numeracy. The research will provide recommendations on how to enhance literacy motivation in skills training programs through the use of appropriate task assessment techniques, teaching methods, materials development approaches, and self-evaluation procedures.

Recognizing that a learner's view of the value of literacy is determined in large measure by the opportunities for real change in the learner's circumstance, the research will explore how economic incentives may be related to other variables in achieving literacy, such as the stage and rate of economic development, the percentage of the local population that is literate, the political climate with regard to human resource development, the complexity of the written language and its status in relation to spoken languages, and the nature and amount of reading material available.

In order to determine how program design can respond better to the needs of learners, the researchers will gather data on levels of literacy motivation and achievement by age, sex, occupation, socioeconomic status, and prior education. A second important focus will be on the nature and extent of learner participation in planning and managing the literacy training program.

Project researchers will try to identify factors that contribute to effective literacy instruction in skills training programs, including training methods, class size, schedule, duration, membership criteria, and the amount and kind of training provided to instructors. It is expected that this research will result in a sourcebook of tested recommendations for literacy and skills training specialists who wish to adapt or establish a curriculum to enhance literacy motivation in skills training programs. ■

Persons who know of or are doing related work and who wish to be kept informed of this research are invited to write to Dr. Mary C. Rainey, Literacy Oriented Functional Education Project, Creative Associates, Inc., 4419 39th Street, N.W., Washington, D.C. 20016, U.S.A. Project materials will be made available on an exchange basis.

Mary C. Rainey is project director of the Literacy Oriented Functional Education Project.

On Functional Literacy:

Rather than an end in itself . . . , literacy should be regarded as a way of preparing man for a social, civic, and economic role that goes far beyond the limits of rudimentary literacy training consisting merely in the teaching of reading and writing. The very process of learning to read and write should be made an opportunity for acquiring information that can immediately be used to improve living standards; reading and writing should lead not only to elementary knowledge but to training for work, increased productivity, a greater participation in civil life and a better understanding of the surrounding world, and should ultimately open the way to basic human culture.

Final Report of the World Congress of Ministers of Education on the Eradication of Illiteracy, Tehran, 1965

What Language for Literacy?

by Om Shrivastava

> *The relationship between a reader and his culture is an intimate one. Not only is his language very closely tied up with his thinking about regional and social processes, but the fact of the matter is that the "real world" is to a large extent unconsciously built upon the language habits of the group. No two languages are ever sufficiently similar to be considered the same social reality.*
>
> Edward Sapir

The choice of language for literacy teaching is of vital importance and involves an almost endless list of political, economic, educational, and social concerns. The subject is important because it appears to be psychologically and culturally sound to provide education in the language of the learner — the mother tongue. The language question has been a subject of discussion since the early part of the nineteenth century, when it revolved around the education of children. More recently, the spread of literacy work among adults the world over has brought the discussion to the field of adult education.

When countries in Africa, Asia, and Latin America became independent, the question of language choice for literacy became linked to issues of cultural identity and nationalism. Political concern revolved around the desire to absorb small groups into larger communities and to unify the diverse cultural and political groups within a nation. Financial and technical issues have included policy decisions related to budgets for education and the availability of trained staff and other resources. Social and cultural issues have centered on the questions of access to Western culture and technology, and on changes in traditional customs related to such factors as distribution of population, division of labor, and social and religious taboos. Linguistic factors have included problems of translating new and technical vocabulary into traditional languages, and of giving traditional languages a written form.

UNESCO suggested as early as 1953 that, in order to speed education for the masses, the language of instruction should initially be the mother tongue of the learner, using the script of the regional/national language. Then, by a transfer process, the learner should be given instruction in the regional/national language. It was reasoned that this approach would create more interest among the learners, make it easier for them to learn, and preserve their pride in their own culture. At the same time, learning the regional/national language would give them access to the dominant culture and to the economic system.

Although many international bodies have recognized the importance and discussed the implications of learning to read and write in the mother tongue, there has been little systematic research, with adult learners, on the use of the mother tongue in literacy education. There has been, however, a significant amount of research done with children as subjects in formal educational settings, and it has raised two controversial theories about the choice of language of instruction that have relevance for adult learners as well.

On one side of the controversy are researchers who support the direct method — that of bypassing the mother tongue and teaching only in the second language — who state the advantages of their position as follows:

- The learner becomes confused by first learning to read in the mother tongue and then having to transfer to another language.
- Teaching literacy in the dominant language will give the learner tools for admission to the dominant culture and will aid in his or her economic development.
- Some subjects, such as mathematics, are more easily handled with only one language.
- The learner will learn more quickly and will be competent sooner if all instruction is in the second language.
- Typically, the teacher is better trained in the national language than in the local language.

On the other side are researchers who state the advantages of the mother tongue approach:

- Once a learner has learned to read, transferring this skill to another language is easy; the second language can be introduced systematically.
- The learner will learn to read more easily if the material makes sense to him or her, and will be more likely to develop a sense of success in learning.
- The teacher has a potentially stronger relationship to the community.

Although the studies so far are inconclusive on a number of significant questions, they do indicate a leaning toward the mother tongue-regional/national language approach. These conclusions, however, were based on research done on children. Very little research is yet available when the subjects are adult learners.

The author therefore undertook to study the effects of using the dialect of the adult learner in the initial stage of a program in which the final aim was for the learner to acquire functional literacy skills in the standard regional language. The study compares the gains in functional literacy skills when the initial exposure to written text material was in the dialect, to the gains when the initial exposure was in the standard regional language, which was not the learner's first language.

The subjects of the study were 369 learners chosen from those enrolled in an adult education program in Rajasthan, India. They were divided into two groups. One group of learners — the Dialect Group — was instructed in reading and writing skills at the basic literacy level, first in the mother tongue, and then in the standard regional language. The other group — the Regional Language Group — went through the program from beginning to end in the standard regional language. In this study, the dialect was Wagadi, and the standard regional language was Hindi; both used Devanagari script. The achievement of the two groups was measured through a functional literacy skills test designed for this study.

The data show that the overall functional literacy scores of the two groups were not significantly different. The overall functional literacy score was made up of scores on the component parts of literacy: reading, writing, comprehension, and numeracy. A further analysis showed that the Dialect Group had better scores than the Regional Language Group in writing and numeracy, but there was no significant difference in reading and comprehension scores.

Teachers' records and assessments of the groups showed that the Dialect Group of learners took fewer days to reach the basic literacy and numeracy level than did the Regional Language Group of learners. Teachers also rated the Dialect Group better than the Regional Language Group both in maintaining interest and in achievement, although the perceived superiority in achievement was not substantiated by the research results.

In addition to the insights gained about the language of instruction in literacy education, another set of findings came out of the daily diaries of the teachers, the supervisors' assessment schedules, observations in the field, and conversations with the teachers and supervisors. It was generally agreed that the involvement of the learners and the village community as a whole in starting and running the literacy center is an important factor in its success, and that

(Continued on page 11)

Somalia's Mass Literacy Campaign: The People Carried the Message

The Revolutionary Government that took control of Somalia in 1969 immediately began to look at ways to approach a problem they considered crucial to the country's development: education. The formal education system was not only outmoded and irrelevant to all but a small core of the country's elite, it was concentrated almost exclusively in the urban areas. Fifty to 60 percent of Somalia's three million-plus population are nomadic or semi-nomadic people, living in the rural areas, and they were getting no significant return for their labor in terms of services from the central government. The country's overall literacy rate was about 5 percent, and those who were literate were literate in English, Arabic, or Italian. At that time, a decade ago, the Somali language had no written form.

Officials debated for several years over the choice of an alphabet. Finally, in 1972, the Latin alphabet was chosen, the language was put in written form, and Somali became the country's official medium of communication. The government, under the direction of President Mohammed Siad Barre, decided to stage a two-year mass literacy campaign aimed at irradicating illiteracy entirely, using the newly written language. The first year of the campaign was to be directed at the urban areas, and the second at the rural areas.

The urban phase of the campaign, launched in March 1973, was a fairly easy assignment. The majority of those already literate in other languages lived in the urban areas and already spoke Somali. It was therefore easy to teach the new written language to government workers, teachers, and schoolchildren, who in turn taught other urban residents. This campaign reached about 400,000 people.

The rural campaign, however, was by any standards no easy task. There was little infrastructure to use in reaching the nomads, and one could never count on reaching the same nomad for very long in the same place. Somalia, with an area of 637,657 square kilometers (246,201 square miles), is mainly a semi-arid country, mountainous in the north and low and flat in the south. There are two main rivers, both in the southern region. Rainfall is scarce and unreliable; the wettest areas get about 20 inches of rainfall annually. Only 13 percent of the land can be cultivated.

In large areas of the country, therefore, the nomads depend almost entirely on their animals — goats, sheep, camels, cattle — for subsistence. Animals are a source of meat, milk, and butter, and animals or hides are sold or traded for other goods. The nomads are always on the move, looking for pasture and water for their herds, and their movements are not very predictable. In less dry areas, particularly in the south, the people combine animal husbandry with agriculture and lead a somewhat more settled existence. With an economy based on small herds of livestock and limited cultivation, Somalia is among the poorest countries in Africa; its estimated per capita GNP is US$110.

Not only is the population scattered over large land areas, the transportation system in rural areas is very undeveloped. Most villages, where there are villages, have no roads — or at least, they had none before the literacy campaign. Camels are a major means of transportation. Somalia's communication system includes short-wave radio broadcasting capability; there were about 67,000 radios in use nationwide in 1974.

One advantage to the government's campaign was the homogeneity of the population: about 85 percent of the people are Hamitic, and almost all are Muslim. The nomad's value system is clearly defined, derived from tradition and the Islamic faith. Tradition is transmitted orally, from father to son, often in the form of poetry, which is considered the most important art form. Dancing and singing are also favorite pastimes. Religious men, or *wadaad,* play a vital role among the nomads, in treating the sick, initiating rituals, and teaching. Many Somalis have had their only formal education in Koranic schools, and students of Islam often travel among the nomad camps.

Male dominance is deeply woven into the Somali nomad's lifestyle. Although the formal education system has emphasized education for both men and women, the nomad population — and particularly nomad women — have had little access to it. It is a particularly difficult challenge to give the nomad woman access to education because her days are so completely taken up with the chores and duties imposed on her by the nomadic lifestyle, and because the men must be persuaded that education for women is a good thing.

The Rural Development Campaign

Launched in August 1974, the Rural Development Campaign was the first phase of the government's strategy for taking basic services to the rural population. Conceived first as a literacy campaign, it was expanded to include four dimensions: 1) eradication of illiteracy among the rural populations; 2) public health improvement; 3) animal health improvement; and 4) a census of both people and livestock.

Literacy was not seen as an end in itself, but rather as a means to expose the people to new systems, methods, and ideas; expand their awareness of their own community and of life beyond their community; stimulate their awareness of the central government and its services; urge the people to become involved in national development; and improve communication and self-reliance. The campaign had strong political goals. The Director-General of the Ministry of Education at that time, Mohamed H. Adan, projected that "through the teaching of our revolutionary principles, i.e. the teaching of socialism, and through self-help . . . , the rural masses will be brought to the same level of political consciousness as the population in urban centers."

The government anticipated that an added benefit of the campaign would be a strengthened national unity that would result from the increased contact between urban and rural people. The rural campaign, to be properly carried out, required 20,000 teachers, nearly all of whom would have to come from urban areas. The only major source of people for the task was the school system — intermediate and secondary school students and their teachers. The only way to complete the campaign within the scheduled time was to close the schools for a year and send all teachers and students aged 16 or older to the rural areas to teach literacy classes. This was done.

Teaching Literacy

The teachers lived with rural families and conducted literacy classes anywhere that made sense. In the more settled areas the people sometimes built special huts for the classes, but, because of the heat, they generally preferred to hold classes outside under the trees. For the nomadic population, the logical place to conduct classes was near their water sources. One way of encouraging nomads to attend literacy classes was to give water privileges only to those who attended the daily class. The nomads, however, did not come to the wells every day. To overcome this problem, the teachers had to move with the nomads, and the mobile school was born — an idea that was later to serve as a model for nomad education centers.

The main teaching material used in the campaign was a primer, produced by the National Adult Education Center (NAEC), with lessons on themes relevant to the nomad — cattle-breeding, overgrazing, hygiene. Few literacy students had copies of the primer, and even the more settled agricultural rural people used the primer written for the nomads. The teachers were for the most part untrained and were free to

develop their own teaching methods. The most common method was modeled on the Koranic school: the teacher wrote the letters on a blackboard, then pointed at each letter and read it aloud. Students repeated in chorus what the teacher had read; many students memorized the lessons without learning to read or write.

The NAEC also began publishing a newspaper for teachers and advanced literacy students, with guidance for teachers and articles that could be used as additional reading material in class. Although 7,000 copies of the first several issues were printed, about one-third were not distributed because there were few distribution channels. The newspaper later evolved into a post-literacy newspaper, so that those who had attended the classes could continue to practice their literacy skills in self-learning groups, using the newspaper.

A literacy class in rural Somalia.

The teachers also served an important role in integrating the literacy aspects of the campaign with the health and census aspects. They urged the nomads to take advantage of the health services being offered them and to have their animals vaccinated. Often the teachers served double duty as nurses and animal health assistants.

Results and Follow-up

Some of the most important activities of the campaign were not in the original plan, but were improvised to achieve the goals. The roads that were built to facilitate the implementation of the campaign had a lasting effect on many villages, joining them for the first time to the district market and enabling them to initiate new trade activities. Another significant improvised activity was the staging of plays that helped publicize the objectives of the campaign. Teachers were also influential in establishing youth centers, introducing sports, and changing attitudes about such things as food taboos.

By the end of February 1974, the rural campaign had come to a premature end, largely because of the drought that had begun to take hold of the area. Of the 1,257,797 students who had registered at the beginning of the campaign, 912,797 took the final test, and 795,099 passed it. The dropout rate was 27 percent, and the failure rate 14 percent. In many areas, extremely high dropout rates were attributed to migration caused by the drought.

In other aspects of the campaign, 1,614,241 people were given health treatment, and 1,418,798 were vaccinated. More than 11 million animals were treated, and more than 2 million were vaccinated. The whole campaign cost So.Shs.21,620,000 (about US$3.4 million), of which about So.Shs.5,500,000 (US$870 thousand) was directed to the literacy activities.

The organizational framework that was devised to coordinate campaign efforts was a major contribution to Somalia's future development activities. Prior to the campaign, planners and organizers had conducted a three-week symposium in Mogadishu for 700 representatives of regional and district authorities to discuss the campaign. The fact that the symposium participants had a chance to make concrete proposals for the campaign helped them to identify with it, and it was made clear to them that the implementation of the campaign was their responsibility. The organizational framework that grew out of this meeting provided for the cooperation and coordination of all of the institutions involved, and for participation in the development process by people at all levels, from the regional committee member to the individual villager.

Following the campaign, two national committees — one a policy-making committee and one a technical committee — made up of all of the institutions that had been involved in the campaign, were established to deal with all matters concerning continuation and follow-up of the campaign. Because all activities were meant to be integrated, there was a high level of interministerial collaboration. There were also permanent regional and district committees established, and the community and sub-community administrative units that had made it possible for local people to participate directly in the organization and administration of the campaign were retained.

In the years following the Rural Development Campaign, follow-up campaigns have been conducted, focusing mainly on literacy and using the better students from the literacy classes as teachers. Additional reading materials have been produced by the various ministries concerning aspects of rural development, but there is still a drastic shortage of such materials. In 1976, the year of the first follow-up, 568,546 people attended literacy classes, and 432,710 passed the final test. (Statistics do not differentiate those who had previously attended literacy classes.)

Statistical data that would allow the full evaluation of the Rural Development Campaign in more detailed quantitative terms are not yet available. Evaluation may also suffer a bias, as the campaign has never been exposed to outside scrutiny. There does seem to be enough evidence to conclude that, despite the constraints under which it was conducted, the 1974 campaign had several noteworthy effects: the rural population became aware that the central government was there and willing to help and deliver services; a valuable exchange of culture and ideas between urban and rural people began to take place; studies on nomad life were initiated; and the campaign served as a training ground for community leaders.

Some would suggest that we consider a broader concept of literacy and education for the nomads. These are a people who live very close to the limit of the natural system's capacity to support them. Their survival depends on their ability to read the often subtle and changing signs of the many variables in the natural system in which they live: climate, soils, plants, animals, limited and unpredictable amounts of water, and competing people. This demands a viable ecological literacy — and failure can mean extinction.

At the same time, as modernization, population pressures, and the marketplace

(Continued on page 12)

In Jamaica, the Media Help to Carry the Literacy Message

by Inez M. Grant

Jamaica has been a pioneer in the use of communications media to supplement and multiply the efforts of the volunteer teachers in its national literacy program. Starting with a pilot project in 1966 to apply radio and closed-circuit television to literacy teaching, Jamaica has expanded its use of media for literacy to include a variety of combinations of broadcast radio and television, videocassettes, and audiocassettes for motivation, instruction, teacher training, and outreach.

The history of the literacy movement in Jamaica dates back to the 1940s. Literacy gains were marginal for many years, mainly due to lack of funds and lack of national commitment. A literacy census conducted in 1960 revealed that 42.9 percent of the population aged 15 and over were functionally illiterate. In 1970 the government, with the assistance of UNESCO, established a committee to evaluate the literacy program and to make plans that would move the country toward a goal of total literacy within eight years. The report of this committee estimated that from 400,000 to 500,000 persons, or approximately 25 percent of the population, were illiterate.

A new government in 1972 announced that literacy should be a priority in the nation's development, and declared that every effort was to be made to eradicate illiteracy completely within four years. The National Literacy Programme was created to lead that effort. In 1974, the National Literacy Programme was restructured, and JAMAL was born. "JAMAL" is an acronym for the Jamaican Movement for the Advancement of Literacy, but the words "literate" and "illiterate" provoke such negative responses in Jamaica that the longer organization title has been dropped altogether.

JAMAL is operated by the JAMAL Foundation, the main objectives of which are:

- to eradicate illiteracy in Jamaica within the shortest possible period;
- to improve the literacy skills of the adult population of Jamaica;
- to develop human resources and so enable each adult citizen to participate meaningfully in the social, economic, and cultural development of the country.

JAMAL oversees a program of literacy classes — called JAMAL classes — that students may attend either full-time or part-time daily from Monday to Thursday, or in the evenings. Since 1974 electronic media have been used to supplement JAMAL's program by providing direct instruction, motivating teachers and students to enroll in the program, aiding in teacher training, and publicizing the work of the JAMAL Foundation.

Media for Instruction

The use of media for instruction is the responsibility of JAMAL's Technical Services Department, through its Educational Media and Methodology Unit. This unit provides guidance in choosing the best teaching method for a particular subject area and in preparing programs for national radio and television broadcast through the Jamaica Broadcasting Corporation (JBC). Radio program production and television filming are done through facilities owned by the JAMAL Foundation.

The instructional programs, called the "Teaching Box," are broadcast simultaneously on radio and television and may be heard Sunday through Thursday. Because JAMAL competes with commercial broadcasting for transmission time, its programs are not always broadcast at the peak listening time for teachers and students. JAMAL has distributed audiocassettes and cassette players to the classes to give teachers the flexibility to record and replay the programs at convenient times.

Media for Motivation

The JAMAL Communications Department, organized to promote the activities of JAMAL, initiates and coordinates all of JAMAL's contacts and programs with media stations, the press, and other publicizing agencies. As part of its outreach function, the department produces 16mm black-and-white motivational films for use in JAMAL's 14 mobile units. These units, fully equipped with film projection equipment, have the job of intensifying public awareness of JAMAL's role in developing the nation's manpower resources. The intention is to influence and motivate those who need to upgrade their literacy skills to enroll in the program. The mobile unit is also used to encourage the participation of volunteers to teach or to serve the organization in administrative capacities.

The annual JAMAL/JBC Quiz Competition is one of JAMAL's most popular events. Students who enter compete individually, in classes, and in teams, and, through a series of elimination contests, the successful competitors enter the final competition for trophies and prizes. Thousands of television viewers witness the final competition, held annually on September 8 — World Literacy Day. The quiz competition is an incentive to those who are enrolled as students and motivates others to join the JAMAL program.

A weekly television program entitled "Into the Light" uses films of events relating to all aspects of JAMAL's work for motivation and publicity: graduations, launching of new classes, award ceremonies, motivational drives, student activities, the achievements of graduates. A similar weekly program is broadcast by radio.

Media for Teacher Training

The electronic media also assist in training the large numbers of volunteers — about 12,000 — who comprise JAMAL's teaching force. Most of these volunteers have had no training as teachers, and those who are trained teachers have usually not been trained to teach adults. Radio and television broadcasts for teacher training are available in a series of 12 programs entitled "TOTAL" — Training of Teachers of Adult Learners. The "TOTAL" series is specially prepared to provide training and to enhance the effectiveness of teaching techniques at various levels of student achievement. They are intended to supplement face-to-face teacher training programs and provide some training for teachers who find it difficult to attend scheduled training seminars.

The radio and television teacher training programs take into account the level of competence of the classroom teacher of adult learners, the psychology of learning and teaching as applied to adults, the limitations of each medium, the limitation of studio time available both for recording and for transmission, and the requirements imposed by the Jamaica Broadcasting Corporation (a commercial station) on instructional programs. In television production the usual visuals — film clips, graphics, photographs — are included with a view to more effective communication. Radio pro-

> *There have been few systematic studies on the use of the media to promote literacy or postliteracy learning; little attempt has been made to determine the content and instructional methods that lend themselves to a particular medium or to investigate teacher training in the use of media for particular situations. No one yet has answered the question: What channels of communication can be combined to produce the lowest cost per person reached, the best learning impact, flexibility, speed of distribution, simplicity of production and use?*
>
> The World of Literacy

grams depend on imaginative word-picture representation and on dramatic presentation. The teachers' guide that accompanies all programs gives pointers to the classroom teacher on methods of teaching particular lessons and on the use of radio and television in teaching.

Media for Micro-teaching

Micro-teaching is used extensively in teacher training to improve teacher performance. Using videocassette recording equipment and the teacher training programs on radio and television, a trainee is able to demonstrate his or her teaching performance and have it recorded and played back for an evaluation in which he or she participates. JAMAL has 20 fully equipped permanent teacher training centers for this type of training, and micro-teaching workshops involving teachers and teacher-trainers are held regularly.

Conclusion

While not replacing face-to-face teaching, the use of instructional programs on radio and television and the use of taped lessons on audiocassettes are a valuable supplement to the work of JAMAL's volunteer teachers. So far, JAMAL has accomplished the task of having made 200,000 persons literate, and there are approximately 197,000 students currently enrolled in 8,000 classes all over the island. JAMAL's example shows that the communications media can be used for training students and teachers, motivating students and teachers to become involved in the program, obtaining varied forms of volunteer assistance, and bringing literacy programs more forcibly to the attention of the public. ■

For further information contact JAMAL, 47b South Camp Road, P.O. Box 60, Kingston 4, Jamaica, W.I.

Inez M. Grant, assistant director of JAMAL's special projects department, is a communications specialist who, after setting up the educational broadcasting service of Jamaica's Ministry of Education, established the educational media and methodology unit of the JAMAL Foundation.

Development Communication Report, published quarterly by the Clearinghouse on Development Communication, is distributed free to over 8,000 development professionals.

A center for materials and information on important applications of communication technology to development problems, the Clearinghouse is operated by the Academy for Educational Development, a nonprofit planning organization, and supported by the Development Support Bureau of the U.S. Agency for International Development as part of its program in educational technology and development communication.

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Readers are invited to submit typed manuscripts of no more than 1000 words and to send in photographs.

The Language of Literacy

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when the teacher explains fully the objectives of the program to the participants and the community prior to starting the program, the learners' results are better.

Learners' scores are also better when the teaching methodology emphasizes the involvement of learners, stresses both meaning and word recognition in teaching reading, and uses other principles of adult learning. Learners' scores are negatively affected, often strongly so, by irregular attendance, particularly when the reasons for the irregularity are economic.

Another finding was that the use of the adult education center as a forum for public education, using resources from both inside and outside the village — including folk media and cultural programs such as puppets, story-telling, drama, and games — helps in making a better learning environment, and results in better literacy and numeracy scores. The importance of this finding should not be underestimated.

Conclusions

On the basis of the evaluation of the data, it can be concluded that, in terms of achievement of overall functional literacy of the learners, there is no significant difference between learning initiated in the mother tongue and that initiated in the standard regional language. The data did indicate, however, that where there is a positive difference in terms of the components of functional literacy (e.g., numeracy and writing), it is in favor of the Dialect Group.

It also seems clear that interest in learning to read and write, as well as the rate of progress for the total program, favors the Dialect Group. This means that, although there may not be a significant difference in the functional literacy learning, there is no disadvantage in learning through the mother tongue at the initial level and there may, in fact, be advantages.

The data on which to base decisions on the choice of language may seem inconclusive on the basis of the results of this study. The study does, however, offer a range of factors that need to be considered before the choice of language of instruction is made:

1. What are the linguistic differences between the dialect and the standard regional/national languages?

2. How complex is the written script of the standard language?

3. What is the status of the dialect in the region?

4. What are the resources (people, material, and money) available to produce materials for adults in the languages under consideration?

5. Are there resources of written literature and information available in all languages under consideration?

6. Are there any national policy directives on the matter?

Each of these is important to consider in deciding the language question. The cause of literacy and development should not be hampered by organizers rigidly taking sides in organizing programs in either the dialect or the regional language only. The wider objective is to provide means of communication to the masses in order that they may participate more fully in the development process of their nation. ■

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Om Shrivastava has worked in adult education and literacy in India for the past ten years.

Learning by Radio

(Continued from page 5)

educational programs, in general, need to become more "formal." They have to date never developed the institutional clout to assure their future or become part of the total educational mosaic. Nonformal education has seemed destined to live in a state of financial precariousness at the margin of the educational dossier, often dying in periods of budgetary retrenchment.

In the past, nonformal projects have successfully dealt with specific needs in such areas as agriculture, health, nutrition, family planning and welfare, and community development. But usually they have been conventionally limited in scope. The reordering of nonformal education with a vital component of basic education by radio is necessary if the system is to assume a broader function for a significantly broader general population. The radio education component would give the nonformal system a loose institutional framework and an integrating thrust; it would help reduce duplication and reinforce the learning required for other nonformal activities. As audiences grow, it would become increasingly cost-effective and, with experience, educationally productive.

Radio education thus conceived would come to be the backbone of the nonformal system. The overall combinations of functional literacy projects, community development schemes, vocational training efforts, cultural enrichment and preservation activities, and possible restructured and expanded primary education making up such a system will vary from country to country. But a common feature of these nonformal

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systems could be the role played by the integrating mechanism of radio education.

This is far from being a blueprint for a program of basic education appropriate for the rural masses. Our concern has been to suggest an alternative to break the strict determinism by which basic education has presupposed literacy, and education for literacy has presupposed failure. Clearly, we are in need of an antidote for the gloom spawned by the results of the efforts of past decades, a gloom dense enough to risk immobilizing even the most perseverant. We need not turn our backs on the educational needs of the rural poor out of a "realism" that accurately assesses the difficulties of the past. The organizational and technical capacity exists to contemplate universal basic education, as did the International Commission on the Development of Education in 1972. Admittedly, such is an immense undertaking. Its planning promises to embrace the views of the visionary as much as the technical expert. ■

This article is an extract from Prospects, *Volume VIII, Number 2, Copyright UNESCO 1978. It is reproduced here by permission of UNESCO.*

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Stephen Anzalone, a doctoral student at the University of Massachusetts, was formerly a UNESCO staff member and a United Nations volunteer in Lesotho.

Somalia

(Continued from page 9)

impinge on the nomads' survival behavior, it becomes necessary for them to acquire a sensitivity to a larger sphere of signs and symbols. The drought that cut short the Rural Development Campaign brought about a radical change in the lives of many of Somalia's nomads. It was clear that overgrazing, desertification, and population growth had strained the carrying capacity of the natural system to such an extent that neither the system nor the nomads would recover as easily as in the past. Some 50 percent of the nomads therefore chose to accept the government's offer to help them settle in villages and modify their way of life to accommodate this new reality. For them, especially, an expanded literacy will play a significant role. ■

This article has been adapted by the editor of DCR *from several papers in* Basic Education for Nomads, *the report of a seminar held in Mogadishu, Somalia, April 1-9, 1978. The authors of those papers included Abdi Arte, Amina Adan, and Omar Osman. Copies of the report are available from UNICEF, Eastern Africa Regional Office, P.O. Box 44145, Nairobi, Kenya.*

On File at ERIC

The use of print, radio, and, less frequently, television in adult literacy programs is reflected in the reports reviewed in this column. All are available in microfiche from the ERIC Document Reproduction Service (EDRS), P.O. Box 190, Arlington, Virginia 22210, U.S.A. Most of them are also available in paper copy.

- Brekka, Lawrence T. ***Proposed Literacy Program Activities for Educational Radio and Television of Iran.*** Stanford, California: Stanford University, Stanford Electronic Laboratories, Technical Report No. 19, 1976, 31 pp. (ED 154 792)

The role proposed for Educational Radio and Television (ERTI) in Iran's national literacy campaign includes joint planning activities with the National World Literacy Campaign (NWLC) to develop long-range media support of the campaign. Key findings and recommendations of the Stanford study for ERTI that are relevant to this area are summarized here, with sections of the report giving background on the national literacy campaign in Iran and on the potential role of media in motivational and reinforcement programs, basic instructional programs, and advanced instructional programs. Discussion of literacy programs in other developing countries includes a description of the Lahore (Pakistan) literacy television pilot project. Available from EDRS in microfiche for 83¢ or in paper copy for $3.32 plus postage.

- Hoxeng, James, and others. ***Tabacundo: Battery-Powered Dialogue.*** Amherst, Massachusetts, Center for International Education, Technical Note No. 10, 1975, 31 pp. (ED 168 919).

An opportunity for dialogue within a regular radio school broadcast program was afforded *campesinos* working toward a primary school equivalency certificate through a rural radio school in Ecuador. With the assistance of their local facilitator or "auxiliar," who had been given minimal training in technical and interviewing skills, each group used a tape recorder to prepare cassettes that were sent to the radio station to be broadcast. Programs included such topics as a planning meeting for a community work project, local music, a discussion of "Indian Power," and new readers practicing their skills. Questionnaires were administered to assess literacy skills and self-esteem, both before the recorders were distributed and after they had been in use for six months. Analysis of the responses, plus tangible evidence of progress, indicated that the recorders had been effective in raising self-esteem and increasing knowledge. Available in English or Spanish from the Center for International Education, School of Education, University of Massachusetts, Amherst, Massachusetts 01001, U.S.A., for $1.00. English version available from EDRS in microfiche for 83¢ plus postage.

- McSwain, Martha I.B. ***Opportunities Use Family Resources for Reading in the Developing Countries of Africa.*** Paper presented at the annual International Reading Association World Congress on Reading, Hamburg, West Germany, August 1-3, 1978, 23 pp. (ED 163 416).

As the strongest, most cohesive, and most viable social unit in Africa, the African family has a great impact on literacy. The attitude of parents toward reading and education are highly positive; the language of literacy is frequently brought into the home by fathers, other adult models, siblings, and the radio. In cases where a family can afford to send only some children to school, those who attend school can bring limited functional literacy to other children and adults in the extended family. The various age groups thus contribute greatly to educational development, although inequities exist among ethnic groups due to the rejection by some groups of the language of literacy. This paper includes two stories, one showing how a school girl has carried medical and agricultural information to adults in her village, and another written by a school boy about his first day of school. Available fr EDRS in microfiche for 83¢ or in paper copy for $1.82 plus postage.

- ***Farmers Functional Literacy Programme.*** New Delhi, India: Ministry of Education and Social Welfare, 1975, 22 pp. (ED 123 441).

The Farmers Training and Functional Literacy Programme, initiated by the government of India in 1968, is an effort to translate into practice the concept of linking education to development, particularly for increasing production. The project, a joint enterprise of three government ministries, provides participating farmers with training and field demonstration facilities, functional literacy programs, and special farm broadcasts through All India Radio. A map of the districts covered by the project, a chart contrasting 14 aspects of traditional and functional literacy programs, and a graphic representation of program evaluation results are also included. Evaluation indicates that the overall impact on learners has been satisfactory. Available from EDRS in microfiche for 83¢ or in paper copy for $1.82 plus postage.

Barbara B. Minor, Publications Coordinator, ERIC Clearinghouse on Information Resources, School of Education, Syracuse University, Syracuse, New York 13210, U.S.A.

A Communicator's Checklist

1

Planning for Educational Mass Media, by Alan Hancock (London: Longman, 1977), 383 pp.

Interest in the educational uses of radio, television, and other electronic media has been evident for as long as these technologies have existed. Over the years, projects using one or more of these media have been conducted in a variety of environments by a variety of sponsors in pursuit of a wide range of educational objectives. While the results and lessons of such projects have found their way into the reports of government and international agencies and into scholarly journals and books (notably *The New Media: Memo to Educational Planners,* by Wilbur Schramm, et al., UNESCO/IIEP, 1967), few such studies have fully addressed the practical concerns of people who are actually responsible for the design and administration of new educational media systems. Alan Hancock has written this book with the needs and questions of such people in mind.

Relying on his broad experience and unique vantage point as Director of UNESCO's Division of Development of Communication Systems, Hancock identifies not only the major decision points that planners confront in their efforts to assess the educational potential of the media, but also the complex range of technical, economic, and political constraints under which they usually operate. The cost-benefit and cost-effectiveness criteria that Hancock suggests planners consider in weighing alternative media investments are drawn from a comprehensive review of the literature and from a personal association with numerous planning projects.

Acknowledging that many media projects have been launched without a clear set of educational objectives, Hancock offers in Part 1 of the book an overview of the planning process, beginning with the identification of the intended audience and its educational needs, and proceeding through the setting of objectives to the controlled evaluation of the system's performance and effectiveness. In Part 2 he concentrates on the media planning process itself, highlighting techniques for selecting among the media and stressing the need to relate such selections to a coherent system design. The experience of the World Bank's pre-investment study of educational media in Thailand, which Hancock directed, is reviewed extensively in this regard. In Parts 3 and 4 he concentrates on specific questions and problems that are likely to arise in organizing media production, utilization, and evaluation units and the interactions among them.

Given the wealth of case study material now available on such topics, Hancock does a commendable job of synthesizing past experiences and interpreting them in terms the layman can understand. By the same token, while the professional producer may not feel satisfied with the level of detail or sophistication with which the book treats equipping and managing a modern studio facility, nor the social scientist with the discussion of the different evaluation strategies, the levels of detail and analysis seem appropriate for the planner seeking general background information and policy guidance. This reviewer found the sections on staff recruitment and training (which includes outlines of sample training courses) and on organizing multidisciplinary teams to assess a country's media investment priorities particularly valuable.

Hancock is clearly taken with diagrams, charts, models, and checklists; the text is punctuated with more than a hundred of them. In most instances these contain useful information. They also help to clarify important concepts and preserve the handbook character of the volume. Occasionally, however, the information is presented in a more complicated form than necessary, and this may only serve to confuse some readers, particularly those who are approaching the subject for the first time. A more serious shortcoming is the lack of adequate footnotes and specific bibliographic citations. As noted above, Hancock makes excellent use of published materials, including long quotations from important studies in the field, yet such references are often not accompanied by specific titles or page numbers. This is likely to frustrate some readers and limits the value of the book as a reference guide.

In spite of these stylistic flaws, this is a book well worth the attention of anyone concerned with the past, present, or future role of the mass media in education. It is an excellent account of how this field has evolved in the last decade and provides valuable insights and clear directions for anyone concerned with improving the media's effectiveness. ■

Reviewed by John K. Mayo, Florida State University.

2

The Learning Group: An Indonesian Approach to Community Education. Color slide tape, World Education, 18 minutes.

This slide-tape presentation, developed by World Education, describes the efforts of Indonesia's Directorate for Community Education to meet the needs of Indonesians between the ages of 10 and 45 who neither work nor go to school. The presentation depicts one project in West Java, for example, that trains villagers as group leaders and creates and disseminates learning materials for community education. Mutual assistance and group consensus are key concepts of the project, and emphasis is placed on the discussion of needs rather than the incorporation of a ready-made development message. Learning groups were developed for such subjects as literacy and woodcarving, based on the members' interests; discussion in the groups is stimulated by stories, filmstrips, posters, and drawings. The learning groups make decisions for group action, such as the one featured in this presentation: to develop a clean community water supply. "The Learning Group" would enhance any effort to introduce a participatory nonformal education process. ■

126 color slides, audiocassette, and script are available for purchase (US$75) or for rental (US$15) from World Education, 1414 Sixth Avenue, New York, N.Y. 10019, U.S.A.

Reviewed by Judy Brace.

Observations on Fugelsang's "Beans in a Bowl"

For many years I have admired Andreas Fugelsang's writings on applied communication, and I am delighted that he was able to share with us his many years of practical field experience. (See *DCR* 27 and 28.) I completely agree with him that "there is no such thing as a primitive mind" and that "we must understand that there are different learning styles, different — and culturally conditioned — modes of processing information." He is quite right, too, that the term "illiterate" carries a discriminatory notion: being illiterate is by implication something

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On Fugelsang

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less desirable and less valuable than being literate.

It is truly unfortunate, then, that Mr. Fugelsang perpetuates a stereotype of nonliterates by characterizing them as having a) limited capacity to deal with the abstract, and b) extraordinary memory. In his anecdote about the 80-year-old woman from Zambia, he asks, "Is the ability to abstract an unqualified advantage?" Space does not permit a full discussion of that question, but the implication seems to be that Mama Mukahamubwatu is limited by concrete experiences, hence unable to deal with abstract thought. "Abstract" and "concrete," as Mr. Fugelsang would no doubt agree, are very imprecise terms, and we cannot speak of abstract and concrete thinking in general. Michael Cole and Sylvia Scribner noted several years ago that "it is clear that experimental findings do not allow the conclusion that in general the thinking of any group of people is, or is not, abstract."

In describing Mama M.'s response to a logical syllogism, Mr. Fugelsang comes very close to suggesting that she is exercising what at one time was called "pre-logical mentality." The notion of pre-logical mentality may have been taken seriously at one time, but since the late 1950s the notion has been regarded as a barrier to investigation in the realm of cognitive processes.

With regard to the supposed extraordinary memory of nonliterates, Cole and Scribner again point out that we should seriously question reports of fabulous memory power among traditional nonliterate peoples: "When we turn to the experimental evidence, we see no hint of a general superiority on the part of nonliterate peoples, nor do we encounter qualitatively different modes of remembering. . . ."

A review of the work of scholars of the cognitive process (e.g. Cole, Scribner, Gay, Clammer, Hudson, Deregowski, Price-Williams) leads one to conclude that we can assume nothing with regard to the learning characteristics of nonliterate people. Most of the things that we have tended to associate with nonliterates are described by Cole as "anthropological folklore." We are not sure what aspects of culture, education, experience, rural/urban living, and type of work cause differences among people in performance levels with regard to specific learning tasks, but we are reasonably certain that there are no fundamental cognitive differences between literates and nonliterates, if literacy is taken as the operative factor. ■

Richard C. Burke, Professor of Telecommunications, Indiana University, Bloomington, Indiana, U.S.A.

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Organizations

Afrolit Society, P.O. Box 72511, Nairobi, Kenya. Publishes *Afrolit News*, a communication link for literacy workers in Africa, as well as occasional reports and monographs. Conducts projects and biannual conferences for literacy workers.

Center for Applied Linguistics, 1611 N. Kent St., Arlington, Virginia 22209, U.S.A.

International Council for Adult Education, 29 Prince Arthur Avenue, Toronto M5R 1B2, Canada.

International Institute for Adult Literacy Methods, P.O. Box 1555, Tehran, Iran. IIALM works in close cooperation with UNESCO and the International Bureau of Education to provide documentation and library service, research, training, and information exchange on literacy and functional literacy programs. An extensive publishing program.

International Reading Association, 800 Barksdale Road, Newark, Delaware 19711, U.S.A.

Laubach Literacy International, P.O. Box 131, Syracuse, New York 13210, U.S.A.

Literacy Documentation Service, University of Reading, Agricultural Extension and Rural Development Centre, London Road, Reading RG1 5AQ, U.K. Provides documentation support to planners, organizers, field workers, and researchers in adult literacy and facilitates communication between literacy workers throughout the world. Publishes monographs, annotated bibliographies, accession lists.

Regional Centre for Functional Literacy in Rural Areas for the Arab States (ASFEC) Sirs-El-Layyan, Menoufia, Egypt. Supported by UNESCO and the Arab States.

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Summer Institute of Linguistics, International Headquarters, P.O. Box 1960, Santa Ana, California 92792, U.S.A.

UNESCO, Literacy Activities Section, No. 7, Place de Fontenoy, Paris 75700, France.

UNESCO Regional Office for Education in Asia and Oceania, 920 Sukhumvit Road, Bangkok, Thailand.

World Education, 1414 Sixth Avenue, New York, New York 10019, U.S.A. Founded as a literacy education organization, World Education has changed its focus to that of participatory approaches to adult learning. Publishes *World Education Reports*, three times a year.

Films

Kibaru. Shows how a rural newspaper in Mali has become a source of news and an open forum for farmers and government departments, and has been an incentive for nonliterates to learn how to read. Produced by UNESCO, 1977, 17 minutes 40 seconds, color, 16mm. Available in English and French from UNESCO, Room 2401, United Nations, New York, New York 10017, U.S.A.

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Dilemmas

(Continued from page 16)

the contractor's misunderstanding of the project design. The contract team decided early on to have a pre-training workshop for the health personnel from one of the project sites. The volunteers were notified by cable to prepare for the arrival of 20 people from the capital. The MOH's regional and district medical directors had not been notified or consulted. The volunteers sent a message to the contractor suggesting a meeting to plan the workshop and to work out the proper protocol. The contractor did not receive the message in time, and the contingent from the capital (including the national director of the project and the donor agency's country director) arrived several days later to open the workshop. In deference to the guests, the people available gathered for the workshop, amid considerable confusion.

This was, to be sure, not an easy project to understand, but the design allowed no place for the myth of the infallible expert from the West. One wonders, too, if the initial enthusiastic commitment of the MOH, donor agency, and volunteers to rural-based activities was not more a result of the long waiting period than real comprehension of the organizational and planning needs of the project.

In any case, the decision of the MOH to replace the contract personnel indicates that a difficult lesson has been learned, as much by the contractors as by the host country. If assumptions could be made at all in the work of development, one would assume that future project activities would include an intensive orientation to the project for *all* project staff. ■

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Dilemmas in Country X: Candid discussions about failures

Projects designed for developing countries nowadays tend to emphasize local participation in the planning and implementation processes. This Dilemma *points up that even when participation is highlighted in a project's design, it will not occur unless and until all of the project personnel are committed to the principle. The* Dilemma *was contributed by Patricia A. Mathews, a specialist in development communication.*

The basic goal of this project was to promote the delivery of rural health care services by training village health workers. The project design emphasized the development of a six-level administrative infrastructure within the Ministry of Health (MOH) that would support the planning and implementation of project activities, from the village to the national level. This was felt to be a distinguishing factor in the design, as it encouraged project management by the host country.

The project was funded by a major international donor agency, and a prestigious university was hired by the MOH to direct the project. According to the project design, the contractor's technical assistance team was to be responsible for directing the development of the administrative infrastructure within the MOH. The contract team included a project director for the national level, two physicians to work at the regional levels, and two short-term consultants to assess the training and community development aspects of the project. Technical assistance was also provided by a volunteer agency, with volunteers assigned to help coordinate the project at the rural level.

The volunteers were first to arrive in-country, and, as contract negotiations dragged on, it was some time before the contractor's team arrived. Meanwhile, the volunteers were sent out to the two project sites, where they worked with local health personnel to collect baseline data and introduce the project to the communities. Through these activities at the rural level, ideas began to evolve about how to implement the project once the contract team arrived. The volunteers were a conduit for these ideas to flow from the communities to the regional and national levels.

Up to this point the project was an excellent example of decentralized, rural-based project development, using paraprofessionals in a participatory development process. Following the arrival of the contract team, the project became an equally excellent example of a disorganized, poorly managed project, fraught with interpersonal conflict and inappropriate development processes. Within 18 months the project was so muddled that the MOH asked the contractor to replace those members of its team who had not already left out of frustration.

What happened?

The volunteers and donor agency health officer worked with the project design for almost a year before the contract team arrived, and they had an understanding of its implications for the MOH. The volunteers' initial orientation to the project, and their subsequent discussions with all project personnel, stressed the necessity of careful organization and planning to support the development of rural-based activities.

The contract team, however, had only a brief orientation to the design and to the MOH. Everyone, including the contract team themselves, assumed that the contract team understood the project and their role in its implementation. This was somewhat like assuming that any car mechanic can fix a Muggati. Although fundamental expertise was there, the contract team lacked the specific information that would have completed their qualifications. A careful reading of the project paper would have helped them avoid many serious mistakes.

One incident will serve as an example of

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Development Communication Report

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development communication report

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While the bulk of international development assistance for the last decade has been directed to solving the problems of the "poorest of the poor" in the rural areas of developing nations, the urban sector has not been neglected. Policy makers recognize that in the final quarter of this century, the size of the urban population in developing countries is expected to increase by nearly one billion, as a result of natural population growth and rural-urban migration, from an estimated 650 million in 1975 to more than 1,600 million in 2000. World Bank figures indicate that "by the year 2000, some 40 cities in developing nations are projected to exceed 5 million in size, while 18 of them may be larger than 10 million." This urban expansion will be a major challenge for those responsible for urban resource management as the stress on urban land, transport, shelter, water, sewerage, and other services intensifies.

Like the Zambian project described below, many projects now underway in the cities of developing nations are applying the lessons gained from rural *experience with development communication to the problems of delivering social services to the poorer segments of the* urban *areas. The two-way communication flows they have been able to achieve are proving valuable to urban managers attempting to understand and keep pace with their rapidly growing constituencies.*

Development Communication in an Urban Setting: The Lusaka Squatter Upgrading Project

by Kirsten Karanfilovic

Lend me your labour mr. man
I'll show you a good plan
take yourself a bag of cement and lots of soil
you're ready to make a brick no rain
can spoil
let us make houses forever our own.

(Excerpt from a song composed and played by a group of residents in George squatter compound in Lusaka, Zambia)

Due to the increase of its urban population following Independence in 1964, Zambia is now, with the exception of South Africa, the most urbanized country on the African continent south of the Sahara. The phenomenal increase of people living in urban areas has been concentrated in Lusaka, the capital city, whose population grew from 123,000 in 1964 to 400,000 ten years later — an average of 15 percent a year from 1964 to 1969. The increased private and government economic activities generated by the attainment of Independence helped employment in the formal sector to grow at a rate of 11 percent a year, thus the majority of people migrating to the city have been absorbed into the work force.

While employment opportunities have nearly kept pace with Lusaka's population growth, however, housing has not. In the first ten years following Independence, only 10,000 new houses were provided in Lusaka. People therefore had to find ways to provide their own accommodations, and unauthorized settlements mushroomed around the city. Many of the houses the people built were mud brick with thatched roofs, resembling the houses in rural villages. In general, the houses were appropriate for the local climatic conditions, but because people lived with the insecurity and fear that they would be evicted and their houses demolished by the government, maintenance of the houses was poor. People lived from day to day, in shelters that everybody regarded as temporary. Today, 250,000 people — half of the inhabitants of Lusaka — live in self-established settlements, or squatter areas.

Upgrading

By 1972, the Zambian government was forced to acknowledge that the squatter areas represented assets in both social and financial terms, and that upgrading these areas was the least expensive potential solution to the housing problem. An effective upgrading effort could achieve three major aims:

- give security of tenure to the so-called "squatter";
- improve the physical condition of the houses; and
- provide basic infrastructure and social services to the communities.

In 1974 the government established the Housing Project Unit within the Lusaka City Council to upgrade three major squatter complexes — Chawama, George, and Chaisa. Financed by a joint Zambian government-World Bank loan of US $41.2 million, the project is charged with providing the existing communities with piped water, storm water drainage, and proper roads with security lighting. In addition, community facilities such as schools, health clinics, multipurpose community centers, and markets are being built.

In order to make way for new roads and community facilities, some families have had to move out of the existing settlements; others have been moved to reduce the housing density. These families are being resettled on serviced plots in the overspill area located adjacent to upgraded settlements.

The project calls for 7,800 new houses to be built in the overspill areas, and for 19,500 existing houses to be improved to an acceptable or good standard. A total of more than

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A publication of the Clearinghouse on Development Communication
Supported by the Development Support Bureau of the U.S. Agency for International Development

160,000 people will benefit from the improvements to these squatter settlements.

A crucial part of the upgrading process, which is based on self-help, is the motivation and participation of the residents in the implementation of the project, thus two-way communication with the residents is acknowledged as prerequisite to the project's success.

Project Support Communications

To establish proper facilities for communication between the communities and the Housing Project Unit, UNICEF has contributed to the establishment of a Project Support Communications Unit. This unit uses media tools such as videotape, slides, films, audiotape, photographs, and printed materials such as posters and leaflets to support the activities of the Housing Project Unit. Innovative approaches using street theater and popular music from the squatter compounds have proved to be particularly effective in enhancing the flow of information to — and from — the project participants.

The Housing Project Unit uses local party officials as middlemen in the communication process. Before upgrading started, the political leadership in the squatter compounds was elected by the residents and made decisions on behalf of, and in direct consultation with, the electorate. It is through this elected leadership that messages are now sent to all of the residents, and it is through collaboration with the leadership that opposition to project operations is avoided.

The communications unit has played an important role in arranging and taking part in briefing meetings and leadership seminars to inform these local authorities about every step of the project. Media such as slides and videotapes, produced by the communications unit, have been used in such meetings to review project activities and to stimulate discussion. As a result of this process, feedback from the community on planned project operations has in many cases changed decisions to the satisfaction of the residents.

The communications unit has worked with the community development workers attached to the Housing Project Unit in arranging slide and film shows to augment information delivery to the residents. These events normally take place in the evenings and on weekends. The slides generally pertain to different aspects of the upgrading process and give the residents a visual idea of what is entailed in their participation in the project. The average size of the audience at these meetings is about 500 adults.

Open-air Theatre

Open-air theater has been used in the Lusaka project to encourage audience participation and to get feedback from the residents. Three plays have been performed, not only in the squatter areas, but on radio and television. The theme of one play is the importance of constructing houses that can be completed within the financial means of the participants. The play stresses modest housing and the use of less expensive building materials such as soil-cement blocks, which are a viable alternative to concrete blocks.

Another play, "It Will Be Better Tomorrow," deals with upgrading in general, and points up the positive impact of the project on the life of the principal character, a skeptical resident of a squatter compound. This play has been performed in English and in two local languages. The theme of the third play, "How We Built This Compound," is an affirmation of the concept of self-reliance.

Street Music

Since 1976, the Buntungwa Star Band has been attached to the Project Support Communications Unit. The musicians, all residents of one of the squatter compounds, make their own instruments and compose songs about the benefits of cooperative self-help work, Housing Project Unit operations, and individual self-help jobs such as soil-cement block making. Lyrics are in the most widely spoken of the local languages.

The Band performs at various block-making demonstration sites, attracting residents, passing on the message, and providing "load-lightening" musical accompaniment to residents who are demonstrating the process of making soil-cement blocks. The Band also entertains at meetings of the residents in the compounds, and their songs are used as background music for radio programs.

The communications unit has contrived in the release of two seven-inch single records by the Band, publicizing project activities. The records, "Chitukuko" (development) and "Twaliculile" (we suffered), have great popular appeal and have managed to spread the messages of the Housing Project Unit to a large audience.

Radio Programs

In 1975 the communications unit participated in the production of a radio program, "Self-help Forum." Subsequently, successful negotiations with Radio Zambia resulted in the donation of free air time, and several series of programs have since been broadcast. In the first series, squatters and project staff shared ideas related to upgrading. This series, "Squatter Forum," consisted of 13 programs. Evaluation of the radio programs indicated high and positive reception, so they have been continued by the communications unit. Another series of 13 programs dealt with issues of current interest, such as the introduction of payment-of-service charges and a briefing on occupancy licenses.

Other Communication Functions

Another objective of the unit, to establish good communication channels *within* the Housing Project Unit, is achieved through a monthly newsletter that serves as a forum for the staff to air their views. The communications unit also serves as a liaison with the press (national and international newspapers and magazines), radio, and television to create a favorable image of the project.

Visitors from both Zambia and abroad are given an orientation to the project that includes lectures, slides, films, transparencies, and briefing materials, as well as guided tours in the areas where the Housing Project Unit is operating. By visiting the squatter areas of Lusaka, one can see houses being improved and constructed, largely in a spirit of self-help and self-reliance. Upgrading is by nature a continuous process, one that requires ongoing and open communication channels, and the success of the Lusaka project thus far is an indication that the communication channels available to the project participants are being used to good effect. ■

Kirsten Karanfilovic has been working since 1978 as communications officer in the Project Support Communications Unit. For more information contact her c/o the Housing Project Unit, Lusaka City Council, P.O. Box 34586, Lusaka, Zambia.

An excellent source of audiovisual materials related to urban development is Vision Habitat—the United Nations Audio-Visual Centre for Human Settlements. (See "An Interview with Andreas Fugelsang," DCR No. 24.) Established in 1976 to distribute films produced for the Vancouver conference on human settlements, Vision Habitat is now part of the United Nations Centre for Human Settlements (UNCHS), headquartered in Nairobi, and is responsible for distributing information materials generated by UNCHS.

UNCHS has recently started a program to develop training materials in the field of human settlements. These materials will consist of a series of educational packages for use in training project managers and middle-level project staff. UNCHS has adopted a new approach in these packages, combining films with written case studies. The first package, on the theme of slum improvement, focuses on a marginal settlement upgrading project in Barrio Escopa, a community of some 8,000 people in Quezon City, the Philippines. The project is jointly sponsored by the U.N. Environment Program, UNCHS, and the Philippine National Housing Authority.

The UNCHS training package contains a 40-minute 16mm color film, "Little by Little — Upgrading Barrio Escopa," produced in collaboration with the National Film Board of Canada. It also contains 30 copies of the written case study and an instructor's manual. The first edition, which is experimental and in limited quantity, may be purchased from the UNCHS Information Division, Kenyatta Conference Centre, P.O. Box 30030, Nairobi, Kenya.

The Social Marketing of Contraceptives in Mexico

by Luis de la Macorra

PROFAM, a new program for the social marketing of contraceptive products in Mexico through commercial channels, has been able to achieve in a short time what was once considered almost impossible: it has made "contraceptive" an accepted word in Mexico. After only one year on the market, PROFAM contraceptive products — a new nonprofit, subsidized brand — are sold in 85 percent of the country's 10,000 drugstores. In most of these stores, PROFAM products are shown on an attractive display unit placed on the counter near the cash register, a circumstance that would have been unheard of as little as a year ago.

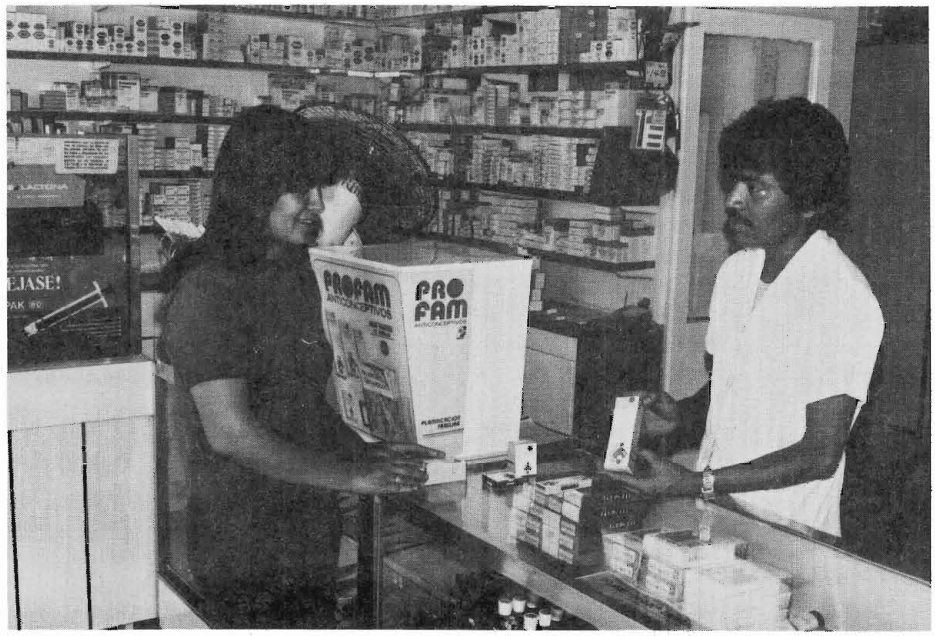
Since 1972, when the Mexican government inaugurated its first government-sponsored national family planning program, Mexico has developed one of the most aggressive family planning programs in the world. Before 1972, the government's position had always favored population growth. It became obvious, however, that if the population continued to grow at the 1972 rate of 3.5 percent annually, the population would reach 135 million by the year 2000 — roughly double the country's 1978 population level. The government's ultimate goal is to achieve a 1 percent growth rate by the year 2000. By 1978 the rate had been reduced to about 2.9 percent annually. Thus, an aggressive program is necessary if the 1 percent goal is to be reached.

The current government program is spearheaded by the Coordinación del Programa Nacional de Planificación Familiar, which unifies the efforts of the three major health institutions in Mexico, and is supported commercially by PROFAM, a private nonprofit institution.

PROFAM was organized in 1978 when, after reviewing the situation in Mexico, investigators found that almost one-half of the contraceptive users obtained the products they required through regular commercial channels of distribution such as drugstores. The rest of the users received contraceptive products (generally free of charge) through hospitals, clinics, and community-based distribution systems. The investigation revealed that contraceptive products available through drugstores were expensive, lacked dependable distribution, and had no promotional advertising or educational support, even though the general consumer was hungry for information on how to engage in family planning.

Based on these facts, a group of individuals, mostly executives of private Mexican companies, decided to organize PROFAM as a private nonprofit enterprise to market contraceptive products at cost nationally, not only through drugstores, but also through other channels of distribution. In order to properly plan the strategy to be followed, the organization first had to carry out one of the most comprehensive market research investigations on family planning ever conducted in the world.

During 1978 a three-phase market research program was developed that included a qualitative motivational analysis phase at the consumer level, a quantitative consumer analysis, and an investigation to determine knowledge, attitudes, and practices of retailers of both drugstores and food stores. Based on the results obtained, PROFAM developed not only the basic operational strategy, but also the sales, advertising, and educational plans for introducing PROFAM contraceptive products in Mexico.



Product display units have been distributed to most of the drugstores in Mexico, placing pamphlets and products within the reach of the consumer.

The market research program helped the organization to determine the correct formulation and types of contraceptive products on which to focus. An accepted package design was researched and developed, and simple instructional leaflets were prepared. During the month of April 1979, through a well-trained sales force of 30 promoeducators, PROFAM began distribution of five contraceptive products to drugstores throughout Mexico. These products include the pill, the condom, foam, cream, and vaginal suppositories, all of which are manufactured locally and sold at cost.

It was understood from the beginning that in order to guarantee the success of the program, it was necessary to develop an advertising campaign with sufficient impact and penetration to support massive sales of PROFAM contraceptive products. This represented a totally new challenge. No contraceptive products had ever been advertised and promoted in Mexico, and the word "contraceptive" was not an acceptable term to use in mass media advertising. Careful planning of the creative strategy and advertising copy was required, since it was necessary to obtain the approval of the Health Department for every phase of the campaign. It was necessary to convince media representatives that what PROFAM proposed to do was not only correct but necessary for the future of Mexico, and it was, of course, vitally necessary to reach potential consumers, both men and women, and convince them of the benefits of family planning and the use of PROFAM products.

Using the results obtained through the motivational market research investigation, an advertising campaign was developed, to be implemented in concert with the distribution program. The initial phase of the advertising campaign, prior to the initiation of PROFAM contraceptive sales to the consumer, used the mass media, particularly newspapers, to announce the introduction into the market of the new PROFAM contraceptive products, emphasizing the fact that they were being made available to the population through an educational family planning program. It was important to em-

(Continued on page 4)

A large number of printed educational materials have been prepared to support the PROFAM distribution program.

phasize the educational aspect from the beginning in order to provide a base of respectability from which to develop the total program.

Soon after initial distribution had been achieved in 40 percent of Mexico's drugstores (approximately three months after the beginning of the distribution campaign), a new phase of the advertising campaign was initiated, announcing the availability to the consumer of the five economic and efficient contraceptive products, under the umbrella trade name of PROFAM. The theme of the campaign was, "If the problem is family planning, the solution is PROFAM." Research results had indicated that people were concerned about family planning but did not know how to decide properly which was the best contraceptive product to use and how to use it. PROFAM intended to answer these questions, gearing its messages to the responsible Mexican couple. This second phase of the advertising program was to be carried out for the duration of the distribution effort in drugstores and was to last for approximately 10 months. The basic medium for the campaign was radio, supported by magazines and newspapers. Even though all of the media employed the same basic messages and strategy, implementation was adjusted to take into consideration the socioeconomic level of the segment of the population to which the message was directed through the particular magazine or radio station.

The objective of this phase of the advertising campaign was to reach all consumers of the middle and lower socioeconomic levels with the message that PROFAM was an educational program that offered low-price contraceptive products through drugstores, where the necessary family planning orientation could also be obtained.

The original advertising strategy included a third phase, to be initiated with the expansion of distribution to other outlets such as general stores in rural areas. This third phase, which emphasizes the characteristics of each contraceptive product and indicates why one of them is the ideal product for each couple, was begun in June 1980.

Knowing the great desire for information on the part of a large segment of the population, PROFAM began in the fall of 1979 a question-and-answer service through the mail as part of the promotional program. The concept was popularized through a column included in six high-circulation popular magazines. Written by Dr. Ana Campillo, PROFAM's Medical Director, the column offers to answer any question on the subject of family planning and sex. As a result of this promotion, an average of 40 letters are received every day, requesting all kinds of information relevant to family planning.

Mass media communication is not the only means employed to promote PROFAM and educate the potential consumer. During the last two months of 1979, a force of 50 well-trained women conducted a house-to-house sampling program, visiting a total of 182,254 homes in Ciudad Netzahualcoyotl, a large lower-class marginal community near Mexico City. The women left a family planning message in each home by distributing pamphlets and free product samples. This effort was the largest house-to-house sampling of contraceptive products ever conducted.

After one year on the market, and less than one year from the beginning of advertising, PROFAM is a well-known line of contraceptive products in Mexico, a fact that can easily be substantiated by the large number of humorous references to PROFAM in newspapers, magazines, and radio programs. It is not uncommon to see PROFRAM referred to in graffiti and cartoons. PROFAM has achieved this level of acceptance and visibility by using commonly accepted marketing practices, integrating an aggressive marketing plan using media advertising, house-to-house sampling, and promotional support, to give the consumer the product required at the lowest possible price.

Luis de la Macorra is General Director of PROFAM. For further information contact him c/o PROFAM, Ejercito National No. 201, Mexico 17, D.F., Mexico.

South-North Exchange:

A Texas Program Based on Latin American Models

by Emily Vargas Adams

María Cristobal peers out of the sheet-covered window of her two-room house to see who is knocking at her door. Her one-month-old infant awakens from his nap as she opens the door to welcome her neighbor, Carmen Castillo. Carmen is there to invite Mariá to join the Programa Padres e Hijos — the Bilingual Infant Development and Parent Education Program — to learn how to guide the development of her baby. Maria agrees to participate in the program, and soon she is receiving weekly home visits and joining in monthly small group sessions with other mothers in her *barrio*. In those sessions she learns about infant stimulation, nutrition, health, and safety, and how to make inexpensive learning toys. Through her participation in the program, Maria enrolls in her first formal adult education classes. In the future, with further preparation and training, María may join the Volunteer Home Visitors group and thereby help to reach out to other young mothers in the *barrio*. She may also help with media presentations, the toy lending library, or the program's Family Assistance Service.

Mariá's *barrio* home is in Austin, Texas. The Programa Padres e Hijos, a community program of the Center for the Development of Non-Formal Education (CEDEN), is based on low-cost program and media production models developed in several Latin American countries. This CEDEN program, like its Latin American models, is notable for its high levels of local participation, cultural relevance, flexibility, and positive outcomes in terms of family and child development.

The program's media work, directed by Patricia Platt, has evoked the active participation of other members of the CEDEN team and the community. The three main

types of media and materials activities are slidetape presentations, videotapes, and infant development albums for parents. All presentations are bilingual, using local Mexican-American vocabulary and idiomatic expressions, and all use local music.

Local mothers apply their knowledge and experience to the choice of themes for the slidetape presentations, to the picture-taking process, slide selection, and the choice of music. They also participate in the formative and summative evaluation of each presentation by reviewing the content, methods, impact, quality, and other dimensions of the work. Through their assistance, the cost of production is lowered, and the relevance of the presentations is increased. The utility of the media presentations completed to date cannot yet be fully evaluated, as the program is still in its pilot phase, but initial indications are that the mothers are keenly interested in the presentations and find them useful in reinforcing the curriculum of the home visitations.

Although the Programa Padres e Hijos has focused on the positive and rapid development of the infant, a series of secondary "opening-up" effects are occuring that will be examined in the program's appraisal and evaluation stages. These include increased family solidarity, increased utilization of adult learning services, and the promotion of *barrio* development.

Phase II of the program will extend from October 1, 1980, to June 31, 1981, and will include a strong evaluation and research component. The program's ultimate goal is to provide a replicable model for use in other communities.

The Latin American program models, methods, materials, and media approaches that are guiding the CEDEN program in various ways include:

- "Programa Niños Inteligentes," Centro para el Desarrollo de la Educación No-Formal (CEDEN), Bogotá, Colombia;
- "Proyecto de Investigación: Desnutrición y Desarrollo Mental," Instituto Colombiano de Bienestar Familiar/Harvard University, Bogotá, Colombia;
- "Programa Padres e Hijos," Centro de Investigación y Desarrollo de la Educación (CIDE), Santiago, Chile;
- "Programa de Estimulación Precoz," Servicio Nacional de Salud, Santiago, Chile;
- "Programa Hogares de Cuidado Diario," Fundación del Niño. Caracas, Venezuela:
- Acción Cultural Popular, Colombia;
- Inter-American Institute of the Child, Uruguay. ■

Emily Vargas Adams was assisted by several other members of the CEDEN staff in writing this article: Patricia Platt, Carmen Castillo, Henrietta Robledo, Elisabeth Barnett, and Terry Mason. For more information, contact CEDEN, 2109 East 2nd Street, Austin, Texas 78702, U.S.A.

An Independent Service for Pretesting Media Messages

by William A. Smith

The importance of pretesting media programs and messages is becoming more accepted by communication planners and media production directors. One problem, however, remains critical: how to administer an effective pretesting system for a relatively small volume of programs. It is one thing to know that programs and materials can be improved if they are pretested with representative groups of a given target population. It is something quite different to organize regularly the human and financial resources necessary to conduct adequate pretesting procedures.

Many planners try to treat pretesting as an integral part of the production task, as an internal project function related exclusively to the improvement of the specific media products being tested. They request that program directors add pretesting to an already extensive list of production tasks. Some projects, particularly those funded by international donors, have been able to muster the resources to support these new costs. In most cases, however, pretesting remains an expensive luxury when it must be built into each new communication project as a separate element.

The internal, producer-administered pretesting model is not only expensive, it also robs future programs of the information and insights gathered in the pretesting process.Only rarely are pretest results shared among program producers. This is true partially because analysis takes time, and also because of the belief that information from pretesting is relevant only to the specific set of programs or materials being tested.

One alternative to the producer-administered pretest that is worthy of some attention is the concept of an independent standardized pretesting service.

Independent standardized testing services are not new to commercial advertisers in industrial countries. Services like those of Gallup and Robinson or Burke Market Research in the United States regularly provide commercial radio and television spot producers with comparative information on information recall and on the attention-getting potential of their media products.

An excellent example of such a service applied to social marketing in the United States is the Health Message Testing Service (HMTS), jointly sponsored by the National Cancer Institute: the National Heart, Lung, and Blood Institute: and the Office of Health Information and Health Promotion and Office of Public Affairs of the Department of Health and Human Services. Each of these government agencies is concerned with promotion of large-scale health education programs within the United States, and each is consequently concerned that health education materials be of the highest quality. The HMTS is an economical way of helping agency and selected independent producers test specific messages and of compiling comparative test data useful to planners of new health education campaigns.

The HMTS consists of three groups. The government agencies (primarily the Office of Cancer Communications of the National Cancer Institute) oversee and administer HMTS. Porter, Novelli and Associates (a social marketing firm that assisted in developing HMTS) prepares test questionnaires, analyzes test results, and performs larger analyses based on normative data gathered from many tests. McCollum/Spielman and Company (a commercial research firm) conducts the field testing.

The Message Testing Process

The first step in the HMTS process is for the message sponsor to submit rough-draft media materials. These may be either radio or television spots, but emphasis is placed on their submission in rough rather than final production form. It has been shown in commercial testing that test results for draft and final formats are similar, but while producers may be willing to make changes in draft materials, they are less likely to heed the results of pretesting if changes must be made in costly final production formats.

The test designers of HMTS then work with the message producer to develop a pretesting questionnaire, including both open-end and closed questions. There is a set of standardized questions used for every message, regardless of message content or objective, and a short series of non-standardized questions that probe sensitive areas specific to each message. The standardized questions are divided into two categories: 1) demographic questions that elicit information on the respondent's age, sex, educational level, occupation, and income; and 2) standard measures of communication that indicate the message's ability to attract listener attention and the degree to which the main ideas in the message are communicated accurately. In contrast, a non-standardized question might probe whether the audience would have a negative reaction to viewing a particular image, or it might assess the comprehension of specialized vocabulary or the credibility of an important character in the message.

Once the questionnaire has been devel-

oped, specific target audience characteristics are identified. The HMTS uses a total test group of 300 respondents, 100 in each of three different geographic locations. Respondents are recruited at random, brought to one of the three testing facilities, and told they will be asked to judge the quality of a new television show being considered for national distribution. In actuality, the television show is simply a composite of old variety acts; it is the commercial messages that are being tested.

The testing sequence is divided into eight phases, during which respondents are shown four messages that are being tested, mixed in with the variety program and with three control messages. They are asked to answer questions related to the variety show, as it is important that they believe it is the variety show being tested. The next set of questions assesses the attention-getting power and main idea recall of the test messages.

Respondents are then given a second chance to see each of the four test messages, again in the context of a television program. Again, the respondents are asked to answer questions about the variety program, then to make qualitative judgments about the test messages. They are asked to identify the main ideas each message tried to communicate, what was worth remembering, confusing, hard to believe, liked, or disliked. Finally, respondents are asked to answer specific questions designed to probe sensitive aspects of individual messages.

Within two weeks, the message producer receives results from the message recall and attention-getting questions, along with preliminary observations about the message's performance compared with other tested messages. A final report is then produced that analyzes the tailored probing questions and summarizes the strengths and weaknesses of the message compared to those previously tested.

Applying the Results

Pretesting, unlike summative evaluation and even many forms of more extensive formative evaluation, must be immediately useful to producers. It must tell them something they did not already know, and it must tell them in such a way that they can accept the criticism of their product and can make changes that will improve that product. This is the final and perhaps most important job of the message testing service. It must have personnel who are sensitive to the producers' emotional and financial investment and who are articulate in suggesting changes.

HMTS has addressed these needs in several ways. By having concrete, independent, and reliable data, it provides credible and relevant information to the producers. Its results reflect a systematic process that the producer respects. When 200 of 300 respondents say they are confused when "DES" (a drug being promoted) is mentioned in a radio spot, the producer knows he has a problem. HMTS also provides comparative data to producers. Some producers are uncertain which of two different formats works best. By submitting both formats to the testing service, producers are able to compare their effectiveness.

Finally, HMTS is developing long-term comparative information useful in suggesting future directions of health campaigns generally. Staff members have used the main idea test scores to group the first 17 messages they have tested into three categories: the top five, the next seven, and the lowest five. Using this system, they have been able to identify characteristics common to each group and to develop a list of some 26 effectiveness variables. Six factors appeared to contribute to the success of the messages with the highest scores:

1. The problem in question was mentioned an average of five times in the message.
2. The problem was identified an average of 10 seconds into the message.
3. Dialogue was delivered directly by the characters in the message.
4. Audio and visual elements were well integrated.
5. Both the problem and the solution were emphasized.
6. The subject of the message was clear merely from visuals.

As the number of messages tested grows, these characteristics can be further validated, and separate analyses can be made for specific target groups.

When Is a Pretesting Service Viable?

Our original dilemma was how to provide effective pretesting services for producers whose volume of message production may be quite small. What can be done for the producer who makes five spots a year and simply cannot afford to hire two extra specialists as pretesters, or who cannot reassign existing production personnel to pretesting duties? Is a standardized independent testing service an answer? Maybe, but probably not if the level of total message production in the country is very low. An independent service may be too costly if it has only five messages a year to test.

However, the answer may be yes if the total number of tested messages each year is somewhere around 50. The advantage of HMTS is that it can test messages with different objectives, styles, content, and even length simultaneously. It is not necessary to have 50 clean water messages, 50 diarrhea messages, or even 50 health messages a year. The testing procedure works well with messages of unlimited variety, including commercial messages. This means that it can service a much broader community of media producers and, in this sense, combine effectiveness with practicality.

Imagine for a moment a National Message Testing Service (NMTS) set up at the ministerial level. The precise administrative organization would have to be consistent with the local situation, but the NMTS might be located in the communication ministry; assigned to one of the content ministries like agriculture, education, or health; or work through a local university. The critical point would be its willingness to accept a wide variety of message content for testing. This would ensure sufficient volume to make the service viable and could even generate revenue if commercial advertisers were charged a small service fee.

The NMTS could use school facilities in the evenings as testing centers and could develop a locally suitable random selection procedure for respondents. It would need a director, a group of questionnaire developers, result analysts, and report writers, as well as a group of test conductors. For a volume of 50 messages a year, the NMTS would need perhaps a central staff of four and a test center staff of nine, divided among three to five test centers throughout the country. The number of test centers would be determined in large part by the linguistic and cultural diversity of the audiences to be reached.

The NMTS would do two specific jobs. First, it would provide immediate information to producers on the effectiveness of specific messages, and second, it would collect comparative data over time to develop long-range culture-specific guidelines for message effectiveness. This kind of information would be used by planners to improve long-range programs and save valuable production resources.

The establishment of such a service would not be without problems. It would be costly. It would require national commitment and some interministerial coordination. As a government institution, it would be susceptible to its own bureaucratization. It is not a "small is beautiful" idea, but in some settings it may be a useful and appropriate method of providing quality message testing and long-range development of media production guidelines. As the cost and volume of media production increases, and as we become more demanding of our media products, it may be necessary to move away from the "do the best you can" approach to pretesting and toward a broader, more reliable, and ultimately more economical model. ■

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Project Planning

*This issue of **DCR** inaugurates **Project Planning,** a regular feature that will highlight for development planners the process of planning a communication project or the communication component of a project. Readers are invited to submit descriptions of their own project planning experiences, or suggestions for topics in communication planning that they would like to see treated in future issues.*

A Case Study in Communication Planning: The Liberian Rural Communication Network

by Richard C. Burke

Like many other countries in Africa, Asia, and Latin America, Liberia realized during the 1970s that, despite increased efforts and larger budget allocations, it simply was not possible to train and support enough field-workers, extension agents, teachers, nurses, and other development workers to reach all of the people in rural areas with essential information and services in health, agriculture, nutrition, and education.

In the fall of 1977, participants from the Liberian ministries of education, health, agriculture, local government and other development-related ministries decided to look at this problem of limited human resources for extension work in an innovative and systematic manner. The forum for their discussion was a seminar on communication in development, sponsored by the Liberian Ministry of Information and Cultural Affairs, the United States Agency for International Development, and the Academy for Educational Development. Throughout the three-day seminar, the participants studied a variety of approaches to the systematic use of communications in development, discussed case studies on the use of communications in other developing countries, and engaged in communication planning exercises. The most important activity of the seminar, however, was that people from the development ministries began talking to each other about problems of mutual concern.

In May 1979 a team of senior level personnel from the Liberian development ministries, accompanied by an education and human resources officer from USAID/Liberia, participated in a Basic Village Education Workshop in Jamaica that had convened to review the recently completed Radio Education Experiment in Guatemala. Following the workshop, the team visited the Guatemala project to study at first hand the applications of radio broadcasting to rural development and village education. On their return to Liberia, members of the team formed a permanent working group to continue to study the ways in which communications could benefit rural development programs in Liberia.

During this same period of time that the task force on communications was getting organized, a Rural Development Task Force was established to coordinate the planning of Liberia's development ministries. Ministry programs in rural development had traditionally been highly centralized efforts, with little interministerial cooperation, and with little if any innovative thinking about ways rural people could become more involved in their own development. The Rural Development Task Force wrote a plan presenting a comprehensive infrastructure for decentralization, including development councils, committees, and action groups, from the national and county levels down to the local village level. It soon became obvious to members of both the communications and rural development task forces that they should be working together toward devising effective communication and information activities in support of integrated rural development programs.

Planning Assumptions

In their meetings and discussions, members of both task forces agreed that effective communication planning should be based on the following assumptions:

1. *The communication of information is an essential element of any integrated rural development program.* Rural people in Liberia often fail to use existing services, either because they are not aware that such services exist, or they are not convinced of their usefulness. In remote areas where development activities are less systematic and less concentrated, rural families often fail to take advantage of information concerning pure water sources, nutrition, and community improvement, simply because the information is not presented to them in their own language in a format that is understandable and attractive to them.

2. *Coordinated planning is more efficient than isolated communication and extension activities.* Communication and information activities must be coordinated with other project activities, such as the efforts of available fieldworkers and the delivery of supplies and services. When Liberian farmers are urged to increase their production of rice, they need to know where to buy high-yielding varieties of seed and other commodities, how to use them, and what results to expect. Moreover, a "grow-more-rice" campaign must be supported, in as many locations as possible, by practical demonstrations by well-trained extension agents. The necessary inputs must be made available to farmers at reasonable cost, in convenient locations, and at the appropriate times. Finally, coordinated planning of communication and information can reduce the number of situations in which two or more ministries may be delivering confusing or conflicting messages.

3. *Two-way communication and feedback from rural audiences to development organizations is essential to an integrated rural development program.* It is not easy for development workers who have grown up on centralized planning to think of communications activities from the point of view of the rural audience. It requires considerable preliminary work to determine knowledge levels, current attitudes, and practices of Liberian farmers, and it does not take one long to realize that this type of planning can only be done from the rural areas, and not from the capital city. In the context of communication as a two-way process, planners begin to see evaluation and feedback in a new light. Instead of thinking about evaluation as a step that takes place mainly at the end of a project, the planner comes to view it as a continuous process of gathering information, weighing it, drawing conclusions, and using the information to redesign and reproduce new programs for the benefit of the rural audiences.

4. *For isolated rural people in Liberia, local radio broadcasting is an attractive mass communication medium in terms of cost, range of influence, and long-term feasibility.* The Liberian government already offers radio programming for rural audiences, but much of it is in English, almost all of the programs are prepared in Monrovia, and there is little feeling among rural people that the programs are responding directly and immediately to their needs. If rural development efforts are to be decentralized, then it is essential that radio broadcasting also be decentralized by building production and transmission facilities in regions that serve substantial numbers of rural people. In addition to the building of facilities, program producers must increase their efforts to include local people in the design and preparation of the programs to

(Continued on page 15)

A Communicator's Checklist

1 ***Understanding Pictures: A Study in the Design of Appropriate Visual Materials for Education in Developing Countries,*** by David Addison Walker (Amherst, Massachusetts: Center for International Education, University of Massachusetts, 1979), 380 pp.

Understanding Pictures is based on the author's graduate thesis at the University of Massachusetts and, as a graduate thesis, is a very ambitious undertaking. Chapter 1 provides a useful overview of the state of knowledge concerning pictorial communication in general. Chapter 2 provides an even better review of the state of knowledge concerning pictorial communication with illiterates and marginal literates in non-industrialized societies. Both of these chapters will be profitable reading for scholars and communication practitioners who have *not* read widely in this area. Chapter 3 is a somewhat theoretical chapter dealing with theories of intelligence and cognitive growth.

Chapters 4 and 5 report on the actual field research that was conducted. The author used an imaginative and comprehensive battery of 16 different pictorial communication tests. These tests dealt with such things as identifying photographs and counting cubes, and more difficult tests involving foreshortening, depth perception, and perspective coordination.

The 16 tests dealt with three basic questions:

> The first . . . had to do with pictorial recognition. To what extent do pictures provide the same optic information as the real world of objects? . . . The second question derived from recent cross-cultural research in cognition. It has been found that traditional societies often fail to provide adequate intellectual stimulation for the development of some of the higher cognitive processes. We wanted to find out if this was true in the case of our Nepalese subjects, and particularly, we sought to investigate difficulties pertaining to spatial tasks. . . . The third question we raised had to do with whether or not any of the spatial difficulties the subjects encountered with real objects would have bearing on their understanding of pictorial space.

Thus, the research questions underlying this study are indeed relevant and important to both scholars and communication practitioners. However, after reading the results of the 16 separate tests, one comes away with a sense of admiration for the author's diligence, but a sense of disappointment concerning the book's contribution to theory on one hand and to applied communication on the other. These two areas of disappointment will be addressed in turn.

In spite of the great amount of field research that was conducted, the 16 tests, taken as a whole, do not make a significant contribution to pictorial communication theory. Why is this so? One reason is the sample used. It consisted of 45 villagers, 10 factory workers, and 10 engineering students. In addition to its small size, the sample was "fairly unrepresentative of Nepalese villagers generally and was probably, on the whole, better at interpreting pictures than the average." Given, then, that the study is based on a convenience sample of 65 Nepalese, it is inappropriate to generalize, as the author does in the subtitle, to "developing countries." The research purist will also be troubled by a lack of information pertaining to the reliability and validity of the study.

Most communication practitioners would be willing to forgive the study's methodological weaknesses *if* the study came up with some clear-cut practical guidelines to help in the day-to-day work of developing and using pictures appropriate for illiterate and marginally literate audiences. Out of the total of 380 pages, 10 are devoted to "Designing Visuals for Use in Villages." The author states, "Perhaps the single most important finding of this study has been that topological relationships, such as proximity, separation, order, enclosure, and continuity are fairly easily understood by unsophisticated picture perceivers, whereas euclidean and projective relationships are not." Most of the remainder of the recommendations are either more-or-less common sense to practitioners experienced in the field, or have been included in earlier books on the topic.

In conclusion, *Understanding Pictures* will be of use to scholars and communication practitioners who have done relatively little reading, or who have relatively little experience, in this field. It will be of considerably less value to others. ■

Copies of Understanding Pictures *are available from the Center for International Education, University of Massachusetts, Amherst, Massachusetts 01003, U.S.A.*

Reviewed by Dennis T. Lowry, associate professor of communications at Temple University.

2 ***Communication and Social Change in Developing Nations: A Critical Review,*** by Goran Hedebro (Stockholm: Economic Research Institute, Stockholm School of Economics, 1979), 156 pp.

This short book presents a general overview of theories concerning the role of communication in national development. The author gives his personal perspectives on the merits and shortcomings of different approaches, and does not attempt to provide a comprehensive review of projects or research findings. The book's strength is that it concisely defines many critical issues facing communication researchers and policy makers today. Its weakness is that its analysis of the issues is greatly oversimplified and is shaped more by political ideology than by relevant research and experience.

The book begins with a review of early development communication theories, including the role of mass media in creating empathy and need for achievement, the diffusion of innovations approach, and instructional media for in-school and out-of-school use. Nonformal education and international information flows are also reviewed, and three case studies of alternative uses of communication — in China, Cuba, and Tanzania — are presented. Finally, the author offers a series of recommendations concerning communication strategies and research.

A central purpose of the book is to identify a "new model" of the role of communication in development, and to contrast the new model with the old, discredited "dominant" model created by U.S. communication researchers during the 1960s. Unfortunately, this reduction of the whole field to two contrasting models leads the author to misrepresent the intent and contribution of early researchers, and grossly oversimplify the complex, varied, and often contradictory communication processes that take place in the course of social change.

Basically, the book argues that the old, "Western" model, using mass media and change agents to induce change, really just serves to perpetuate the heavy-handed exploitation of the poor inherent in capitalist economies. In contrast, communication in socialist countries is participatory, and, therefore, responsive to the real needs of the poor. Hedebro reiterates the criticisms of development communication projects and research articulated by many prominent academics during the late 1960s and 1970s: that media teach alien consumerist values, that communication projects fail because support services are not provided, that communication projects are one-way information flows without feedback, that media cannot teach complicated subjects, and that evaluators deliberately underestimate project costs to please the funding agencies.

This "dominant critique" of development communication is flawed for two reasons. First, it overlooks a growing body of studies and projects (many of them described in recent issues of this newsletter) showing significant positive results of communication activities in a number of development contexts. Second, it does not adequately differentiate among different kinds of communication messages

and campaigns. Foreign news agencies, commercial broadcast media, advertising campaigns, and domestic political propaganda should *not* be considered in the same breath with public service communications (agriculture extension, health campaigns, etc.) and accused of jointly working to thwart liberation and development. Communication activities in developing countries serve different masters and different purposes. It is too simple to argue that there is a single "dominant model," or two starkly antithetical models — socialist and "Western." Many socialist countries, after all, make heavy use of media campaigns, and some very innovative work in participatory adult nonformal education is taking place today in nonsocialist countries.

The book ends with some general guidelines for communication activities. Communication, Hedebro argues, should promote *self-reliance, participation, equity in the distribution of information,* and *increased attention to rural problems.* A number of research issues for the future are also proposed, including more policy studies, studies of alternative and traditional communication channels, and more pragmatic cost studies.

In general, the book provides a short, readable review of important issues in the development communication field. Unfortunately, the picture of the role of communication in national development that emerges neglects much of the richness and variety of experience that exists in the field. In effect, it restricts the range of alternative approaches available to the policy maker and project planner. While the book's recommendations for the future may be of interest to communication scholars and academics, they offer little that is new or of immediate practical interest to communication practitioners. ■

Copies of this manuscript are available in mimeographed form from the Economic Research Institute, Stockholm School of Economics, Stockholm, Sweden. The manuscript will be published as a book during 1980 in the United States, in a slightly revised version.

Reviewed by Richard R. Martin, U.S. Agency for International Development.

3 ***The Cheerful Revolution.*** 16mm film, Department of Medical and Public Affairs, George Washington University, 25 minutes, color.

Thailand's highly successful fertility control campaign included an innovative program to desensitize the public attitude toward contraception, set up a network of local community residents as contraceptive distributors, and conduct village fertility surveys. This program, developed by the Community Based Family Planning Services (CBFPS) in cooperation with the Ministry of Health's national family planning program, is well documented in this fast-paced, informative film.

A local hairdresser is depicted in the film as a typical participant in the village distribution program. She distributes contraceptives to the women who are her clients, receiving a small profit from each sale and giving discounts to those of her clients who are acceptors in the progam. Another distributor, a taxicab driver, sells contraceptives in his taxi and recruits volunteers for sterilization. If, in the course of a year, a taxi driver recruits 50 sterilization volunteers, CBFPS will pay his cab insurance for a year.

The film portrays an enthusiastic "desensitizer" working with young factory workers; children playing games with condoms, learning to accept them as common objects; and a mobile vasectomy unit stopping at a factory where a number of volunteers for sterilization have gathered. The other "marketing" methods that are shown in the film share the goal of making family planning acceptable and respectable.

CBFPS is expanding its work with the community distributors to provide them with additional skills in primary health care. Another outgrowth of the CBFPS program is the establishment of the Asian Training Center for Population and Community Development, in Bangkok. This center conducts two-week training courses for family planning workers from other countries who want to learn the techniques that have been so successful in this Thai program. ■

Available in English and Spanish from the Population Field Information Services, George Washington University Department of Medical and Public Affairs, Airlie, Virginia 22186, U.S.A.

Reviewed by Judy Brace.

4 ***Topics in Third World Mass Communications: Rural Development Journalism, Cultural Imperialism, Research and Education,*** by John A. Lent (Hong Kong: Asian Research Service, 1979), 123 pp.

After only 30 years of frustrating experience, LDCs and foreign aid-giving agencies are painfully acknowledging that nation-building is not an easy task. Part of the problem is the diversity encompassed by the word "nation." A small island can be a nation; so can a semi-continent. The mass media are often mentioned as important linkages for promoting national unity. "National unity" sounds like a powerful slogan, but in fact the phrase mirrors one of today's outstanding difficulties: a nation should be a unified entity by definition. If the people are obliged to emphasize national unity decades after a nation was formulated, the nation has a serious problem. Of course, mass media can promote national unity, but mass media alone can never create and sustain national unity.

A related question is whether a primitive person can identify a priori what his nation is. If a nation is exceptionally small geographically, its people can fairly easily recognize their nation, but for most nations on earth, the concept of nation can never be understood a priori. Thus, the people and government of any LDC are confronted with the challenging task of identifying their own nation. How can developmental journalism contribute to the formation and identification of this concept? Should the people start by verifying concepts of smaller assemblages, like communities, communes, or villages?

This book gives us a unique insight into this basic question. The author convincingly emphasizes the need for villagers' participation in the functioning of mass communication in local communities. All kinds of mass media are examined, not only press and broadcasting, but also folk media, mimeographed papers, and interpersonal communications. The author's global review of mass communication cases, some promising, others unsuccessful but informative, leads to the question: "Do villagers need outside help in the implementation of their communication processes?" In attempting to answer this difficult question, the author guides us through a review of the encouraging trend toward indigenization of some Commonwealth Caribbean mass communication agencies, and through an analysis of the historical development of government-media relationships and notions of "freedom of the press" in LDCs.

These analyses are informative, but the author's guiding light seems a little dimmed because of the overwhelming difficulties with which LDCs will have to cope in the coming years: undeniable dominance by foreign news agencies, poor capabilities of national mass communications agencies, and people's suspicion toward their own governments and toward government assurances of a free press in the future. These difficulties are clearly illustrated in the last chapter, which depicts some of the problems of conducting communication research, especially in Southeast Asia.

If this book had referred to the use of mass media for formal education, the reader would have been given a more promising perspective. As it is, the book does give us timely and valuable warnings about mass communication which neither educators nor journalists can afford to ignore. ■

Topics in Third World Mass Communications is available from the Asian Research Service, G.P.O. Box 2232, Hong Kong.

Reviewed by Shigenari Futagami, senior mass media specialist for the World Bank.

Honduran Organization Involves Community in Curriculum Reform Project

by Caridad Inda

Accion Cultural Popular Hondurena (ACPH) is a private voluntary organization that has been conducting adult education programs in Honduras by means of radiophonic schools since 1960. In its relatively short lifetime, ACPH has undergone a potentially shattering transformation. Born under the auspices of the Catholic church and closely tied in its early years to the church's parish structure, the organization is now an independent entity trying to devise a workable strategy for providing meaningful participatory education programs for Honduran *campesinos*. The transformation process is not yet complete.

ACPH was founded in 1960 by Monseigneur Evelio Dominguez, who, as bishop of Tegucigalpa, supported the establishment of a Catholic radio station and of radiophonic schools. The ACPH staff invited parish priests to establish radio schools within their parish boundaries, and the religious organizations became a major channel for promoting the radio school idea among the people.

In the beginning, the content of the radio programs was modeled closely on that of Radio Sutatenza in Colombia. From the start, the objectives of the radiophonic schools have been much broader than simply to make people literate. Substantive areas such as health, agriculture, religion, and home economics have also been covered. A general objective expressed by ACPH in the early years was "to awaken in *campesinos* an awareness of the need to develop their own initiative, use their own resources, and so help themselves individually and collectively to raise their standard of living . . . ."

Politicization and Growth

In 1968, ACPH staff began studying the works of Paulo Freire. They found his methodology well suited to adult learner needs and to the political awakening of a people. Between 1971 and 1974, ACPH introduced substantial program innovations, including an accelerated primary program and an agricultural development program. In June of 1972 ACPH reached an agreement with the Ministry of Education that would entitle graduates of the primary program to receive an official primary school certificate.

Meanwhile, developments on the national level crystallized in the creation in June 1971 of the Coordinating Council for Development (CONCORDE), of which ACPH was a founding agency. The role of ACPH within CONCORDE was defined as "supporting a heightened awareness of cultural values beginning with literacy and leading on to the discovery of the social values of grassroots organizing." The radiophonic schools were to be the vehicle for the creation of grassroots organizations. The subsequent growth and strength of *campesino* movements, especially the National Campesino Union (UNC), are a measure of ACPH's success in grassroots organizing.

Gradually, as CONCORDE became more politicized, the Catholic church hierarchy began to remove church-related institutions from the consortium. When CONCORDE was dissolved in April 1978, each of the participating institutions was left with the tasks of defining its goals and objectives as an independent entity and of creating a public image to attract foreign funding. For ACPH, "separation from the hierarchical church underscored the need for internal reorganization and for new strategies to accomplish its goals."

ACPH Reorganizes

As part of the reorganization, the ACPH board approved a vertical, centralized structure designed to exercise control over the organization's fieldwork and assure more responsible administrative practices. Following this bureaucratization, however, one of the early strengths of ACPH began to erode, namely, the spirit of dedication of the radio school monitors and the staff.

An appreciation of this dedication is fundamental to understanding the tremendous potential for change that the infrastructure of ACPH represents. ACPH is essentially an institution manned by volunteers. There are several hundred *campesino* men and women willing to serve their communities as local organizers and moderators of adult radio school groups. Ideally, there is one monitor per level (the primary school curriculum is covered in four levels), but more often than not, one monitor serves all four levels, especially if the group of adult learners is small. The pre-service and in-service training of these monitors constitutes one of the high priority objectives of the organization.

The Curriculum Reform Project

The Curriculum Reform Project initiated by ACPH in April 1979 attempted to respond to this training priority and to other organizational needs. The more pressing of these needs were: 1) to seek innovative ways to render services; 2) to achieve a maximum cost-benefit ratio; 3) to adapt content and methodology to the real needs of the *campesinos;* 4) to achieve an effective integration of its programs in the field; 5) to become self-supporting; and 6) to ensure greater participation of the *campesinos* in the design, structure, and implementation of programs. ACPH established a project team to work toward developing a program to meet these needs. As of this writing, the project team has attempted a new design for the educational activity of ACPH and has taken the first steps toward implementing a participatory research method in its fieldwork.

In order to respond to the main objective of the Curriculum Reform Project — to design an integrated curriculum — the project team first set itself the task of conceptualizing the work of ACPH as a whole. The team attempted to lead ACPH to see its work not as individual programs for which different individuals are totally responsible, but as varying expressions of a holistic educational concept. Integration is therefore sought in terms of organizational goals as well as at program, administrative, and fieldwork levels.

Participatory Research

The team outlined the initial stages of its design and implemented them on an experimental basis during the first six months of the project. One of the most prominent aspects of the design is the activity they have termed "participatory research on the national reality." The purpose of the participatory research methodology is to create basic tools that the *campesinos* can use to achieve a deeper understanding of their reality — personal, communal, regional, and national.

The project team recognized that one way to understand a complex mechanism — or a social reality — is to study its component parts. When a rural community is aware of its manpower (its economically active population), its land, and its capital, and of the relationships among these elements, it has taken the first step toward self-evaluation. An accurate analysis of these elements provides a basic picture of the community's economic structure. Community members can map such data as geography, climate, crops, land tenure, housing patterns, and communications by themselves.

Working from a model created by Nemesio Porras, the project team experimented with mapping techniques and achieved quite satisfactory results. They discovered that the mapping instruments can be kept simple or can grow in sophistication, depending on

the nature of the community doing the evaluation. Once the resources have been identified, the relationships established, and the problems specified, the community is ready to consider alternatives for action.

Early in the project, the team recognized the importance of complementing their academic view of reality with the *campesino's* perception of the world; therefore, project team members began to work closely with the field staff, radio school monitors, and adult learners. They realized the need for better knowledge of *campesino* thought and language patterns in order to be able to engage in authentic dialogue, whether face to face, in written materials, or over the radio.

The continuing exercise of participatory research would ensure that the office staff, field staff, monitors, and adult learners shared a common knowledge base and were familiar with each other's frame of reference. Themes and curriculum content would result from the organization of this "raw material," and further refinement would allow for regionalization of the materials.

The new teaching learning units produced by this process follow the methodology of nonformal education and are therefore characterized by:

- an integrative approach;
- recognition that the *learner* is the subject of the educational activity;
- placement of the educational process in the context of continuing education;
- considering the monitor as the "animador" or moderator of the group.

The participatory process takes into consideration the psychological, sociological, and financial needs of adult learners, whose judgment of new learning material will be based ultimately on its relevance to the problems they face in their daily lives.

In its initial stages, the curriculum reform process has had a fair degree of success in attracting and sustaining the participation and enthusiasm of the field staff, radio school monitors, and adult learners. Whether the process can be moved out of the experimental stage will depend on whether the necessary support systems can be developed or strengthened. This requires adjusting the structure of the ACPH organization to make optimum use of its available human and material resources — by stimulating the volunteers, supporting the creation of strong associations of radio school monitors, devising personnel policies that provide for advances based on merit and that establish the potential for individual growth and development, and providing pre-service and in-service training.

Conclusions

The purposes of the Curriculum Reform Project team in creating its design were:

- to provide ACPH with a flexible pattern for integrating the organization internally in terms of its own departments and functions, and externally in terms of its links with the national and regional communities, with the local communities, and with subsets of local groups and individuals — the adult learners with whom ACPH actually works.
- to include the local communities in the decision-making process.
- to create a design that is relevant in terms of the larger community and at the same time addresses the needs of the community as community members perceive them.
- to create a design that is open to change on a continuing basis.

The design is now moving into the implementation phase. ■

For more information contact Dr. Caridad Inda, Vice President, International Division, International Research Resources, Inc., 4603 Cheltenham Drive, Bethesda, Maryland 20014, U.S.A., or Professor Cesar A. Aldana, Jefe, Seccion Pedagogica, ACPH, Aptdo. C-24, Tegucigalpa, Honduras.

Caridad Inda is a social scientist specializing in grassroots development in the areas of nonformal education, appropriate technology, and women's issues.

A Game for Teaching Literacy

by Kiki Munshi

Illiterate and semi-literate women in India are playing a game that may help them learn to read. The game is part of an experiment conducted under the auspices of the Self-Employed Women's Association (SEWA) of the Textile Labor Association in Ahmedabad, Gujarat.

"Phul" (named after the flower in the center of the card) started with the concepts used in Bingo. Each player has a card with five numbered columns. As letters are chosen, called out, and written on a blackboard, players place markers — in this case, locally available and inexpensive cowrie shells — on the squares in which these letters appear. The first player to cover five spaces in a row wins a small prize, furnished by the project.

Each column has been "assigned" a universe of consonants and two to three "combining forms," the special shapes vowels take in North Indian scripts when joined to a consonant. The use of vowels together with consonants provides enough possible letter combinations to make the game work, and the game's developers think it probably also teaches and reinforces the use of combining forms.

A game card for "Phul"

The game was designed in response to the problem of motivation among adults in literacy classes in India. In a completely phonetic language such as Gujarati, one of the biggest obstacles to reading is the seemingly monumental task of learning all the letters that comprise the alphabet. The idea behind "phul" is that it will be played as a game but that it will, without conscious effort on the part of the players, either teach or enhance recognition of letters in the consonant-plus-vowel format.

"Phul" was first used in an informal experiment with a group of urban poor women and girls in December 1979. The participants grasped the method of play immediately and had little trouble matching letters on their cards to the letters written on a blackboard. The only problem encountered was in limiting the number of participants. Results of a more rigorous experiment, combined with an attempt to measure the amount of knowledge gain, should be available soon.

If the experiment is successful, SEWA will explore ways to distribute the game. A number of options are possible. One method would be to use the game in much the same way Bingo is played by church groups and charitable organizations in the United States. Players would pay a small sum for a card, and the total intake, minus 10 percent, would be given to the winner. The money withheld could be used to defray the costs of making and playing the game. Another possibility would be to market the game to middle-class families to subsidize its use by social service organizations.

"Phul" is ideally suited to North Indian alphabets but could be adapted for other languages as well. We would be interested in learning of other groups employing similar approaches to literacy teaching. Write to Kiki Munshi, Director of the Station College Executive Project in Adult Learning, University of California at San Diego, La Jolla, California 92093, U.S.A. ■

The Laubach Method for Producing Literacy Primers

by Cynthia Jakes Stadel

In 1974 Luis Oscar Londono, director of Laubach Literacy International's Latin America Regional Program, went to Quibdo, Colombia, to help with the first stages of a literacy project. Quibdo is situated on the Atrato River in tropical Choco state. Though the area is rich in minerals and forest products, capital flows out of Quibdo to Medellin and Bogota, leaving its 60,000 inhabitants impoverished. Many of them suffer the effects of malnutrition, improper sanitation, and polluted drinking water.

Londono had been invited to Quibdo by the regional director of the Servicio Nacional de Aprendizaje (the National Apprenticeship Service). At Londono's request, the regional director formed two investigation teams. One was sent to Barrio Kennedy, an older neighborhood numbering 3,500 residents; the second went to a new housing development of 800 persons, Little Beach. The teams' task was to talk with barrio residents and ascertain their view of city life. What problems did *they* see?

The teams were not only to note the problems the *barrio* residents identified, they were to record the language the people used in describing those problems. According to Londono, their words would form the vocabulary for a regional literacy primer, and the problems they identified would be subject matter for the unit lessons and follow-up books.

This participatory process bears little resemblance to the typical literacy campaign. In the traditional mode, a professional educator is called in to assess the needs of the uneducated "target population" and to design an appropriate curriculum. Adults in such campaigns are often taught the "3 Rs" in a context divorced from their reality. Civil engineers, agricultural extension agents, and public health officials contribute to such campaigns by writing easy-to-read booklets on such topics as how to build a latrine, how to care for livestock, and how to obtain an adequate diet. When their counsel goes unheeded, the experts attribute the failure to the population's inherent ignorance or lack of motivation.

In contrast, Laubach Literacy International defines literacy as the ability to use listening, speaking, reading, and writing skills to solve problems encountered in daily living. The critical question: Who defines the problems to be solved?

In 1971 Laubach Literacy analyzed its experiences in Latin America and concluded that impoverished adults can be motivated to learn only when they realize that the energy they expend on learning will help them resolve immediate social, political, economic, and spiritual problems *as they perceive those problems, not as they are defined by others.*

To ascertain the problems and concerns of the illiterate poor, the Centro Laubach de Educacion Basica de Adultos (CLEBA), headquartered in Medellin, Colombia, has developed what it calls the thematic investigation. Former Laubach researcher Norbey Garcia has described the investigation method as wide-ranging conversations between CLEBA staff and people from the *barrios* or *veredas* where literacy projects are being planned. The people who are interviewed, often meeting as a group with CLEBA staff, determine the topics of conversation. Staff members listen, reflecting aloud the problems they hear expressed and enabling the group to clarify their concerns.

The humble black-and-white line drawing plays an important role in these conversations. As the group talks, a staff artist interprets their concerns. The group critiques his drawings, affirming or correcting his perceptions, and sharpening their own perceptions in the process. In using the listening and speaking skills of the group, the thematic investigation becomes the first phase of the literacy project; it affirms the ability of participants to identify their own needs.

The problems or themes that emerge from the investigations are incorporated into the literacy primers in a complementary blending of the methodologies of Laubach and Freire. The key words chosen to introduce sounds and alphabetic symbols are those arising from the conversations and illustrating the issues confronting the learners.

For example, an urban primer developed in Medellin introduces *p* and *v* with the words *pago* (pay) and *vago* (vagrant). The letter *p* is superimposed on a picture of a man receiving wages; the *v*, on a man loafing. This ancient association technique, which became Frank Laubach's hallmark, helps the learner recall the printed word and initial sound. The theme of the unit is unemployment, a critical concern of Medellin's *barrio* residents. Illustrations for the unit are drawn from the investigation, as are the accompanying story and discussion questions. In a rural primer, *pasaje* (travel fare) introduces the *p* sound in a unit that deals with the transportation problems facing Colombia's rural population.

In the process of developing literacy skills, project participants are thus developing their own curriculum: they identify their own problems, study them, and plan appropriate actions. The need for new information arises naturally out of the desire to plan and act; the literacy study groups and thematic investigations have produced a series of more than 60 books for new literates — Books from the People. Published by CLEBA, titles in this series include *The Economy, Political Parties, Oral Hygiene, Social Security, The Rights and Responsibilities of Workers, How to Keep Accounts, Popular Songs,* and *Sports and Recreation.*

For further information contact Laubach Literacy International, P.O. Box 131, Syracuse, New York 13210, U.S.A. ■

Cynthia Jakes Stadel is editor of public education services for Laubach Literacy International.

Using Radio to Teach English

A major project is now underway to test whether radio can be used effectively to teach English language arts. In the course of the five-year Rural Primary Schools Extension Project, a series of radio broadcasts will be developed to teach English in the first three grades of primary school in an African country where English is currently used as a language of instruction. The project will apply the experience gained in many previous radio projects, particularly the Radio Mathematics Project in Nicaragua. The use of instructional radio should help to compensate for the host country's severe shortage of primary school teachers, brought about in part by the decision to universalize primary education, and in part by increased school enrollments due to population growth.

The Academy for Educational Development will conduct the project, under contract to the U.S. Agency for International Development. The host country will work closely with the contractor during the project: Ministry of Education participants will be trained in monitoring the use of the radio lessons and making necessary modifications, and primary classroom teachers will gain experience in using radio lessons and conducting appropriate pre- and post-broadcast activities. It is anticipated that, by the end of the five years, host country personnel will have gained the administrative and technical skills and experience necessary to ensure the continuation of the radio language arts program, provided the program has proven its effectiveness.

Contact Maurice Imhoof, AED, 1414 22nd St., N.W., Washington, D.C. 20037, U.S.A. ■

On File at ERIC

The papers and reports reviewed in this column are all in English and are available in microfiche or paper copy from the ERIC Document Reproduction Service (EDRS). P.O. Box 190, Arlington, Virginia 22210, U.S.A. Please order by ED number and enclose payment for price indicated plus shipping.

● Ogan, Christine. ***Changing Patterns of Mass Media Use and Effects in an Urban Squatter Settlement.*** Paper presented to the Association for Education in Journalism, Seattle, Washington, August 1978, 35pp. (ED 165 170)

To test the impact of mass communication on the modernization of individuals living in the countries of the Third World, the author devised a follow-up study to a survey originally conducted in 1962, whereby migrant residents in Ankara, Turkey, were interviewed regarding the effects of urbanization on their lives. While economic and living conditions had improved for the 65 original respondents interviewed, the study revealed very little change in behavior and attitudes, other than an overall decrease in the use of mass media and an increase in awareness of the value of voting to effect political change. The findings did not support theories that attribute great importance to the impact of urbanization and mass media in changing traditional lifestyle patterns. Tables comparing the results of the two surveys are included. Available from EDRS in microfiche for 83¢ or in paper copy for $3.32 plus shipping.

● Murphy, Sharon M. ***Voter Registration Drive in Nigeria: Patterns of Communication Influence.*** Paper presented to the Association for Education in Journalism, Houston, Texas, August 1979, 14pp. (ED 177 580)

Approximately 500 people were interviewed in a study designed to assess the effectiveness of and response-motivation to a public action campaign in a developing country. Focusing on Nigeria's voter registration drive conducted in preparation for that country's first political elections in more than 13 years, the study explored some factors that influenced prospective voters' decisions to register and vote, as well as their general attitudes toward the voting process. The results showed that radio, interpersonal contacts, and small group situations predominated, both at the level of initial awareness and at the level of influence on personal decisions to register; radio appeared to be almost as powerful as interpersonal forms at both these levels. While 91 percent of those interviewed were registered and 100 percent said they intended to vote, voter registration seemed to occur with little understanding of its purpose and benefits. The interpersonal factors seemed most effective in influencing such wide cooperation in the registration drive, but the people's experience with political upheavals in the past made them wary of the results of the elections. In addition, the campaign was one of information (telling people to vote) and not of communication (telling them why to vote). The findings suggest that more careful consideration needs to be given to the mentality and experience of the people to whom such massive public information efforts are directed. Available from EDRS in microfiche for 83¢ or in paper copy for $1.82 plus shipping.

● Cooke, Thomas M., and Romweber, Susan T. ***Radio, Advertising Techniques, and Nutrition Education: a Summary of a Field Experiment in the Philippines and Nicaragua. Final Report.*** Washington, D.C.: Manoff International, Inc., 1977, 136pp. (ED 167 121)

In this experiment, infant and child health and nutrition education messages, patterned after the reach-and-frequency techniques of commercial advertising, were broadcast to target groups of young mothers over local radio stations in the Philippines and Nicaragua without the support of more conventional education methods. The messages were developed in consultation with local health and nutrition authorities, recorded using professional talent from local radio stations, pretested with representatives of the target audience, and aired according to the listening habits of the target groups. Evaluation data were gathered through a series of questionnaires administered to 1,000 mothers in their homes before the broadcasts began and at intervals of six months thereafter. These interviews were supplemented by self-administered questionnaires by doctors, teachers, and other community workers. Results indicated that the broadcasting was successful in improving practices of infant and child health care and nutrition, and in bringing about changes in behavior as well as in attitudes and knowledge. Appendices include copies of several questionnaires used in the study, a letter to community workers, and examples of the radio messages. Available from EDRS in microfiche for 83¢ or in paper copy for $9.32 plus shipping.

● Meyers, James, and others. ***Public Marketing: An Alternative Policy Decision-Making Idea for Small Cities. Community Development Research Series.*** Davis, California: University of California-Davis, Department of Applied Behavioral Sciences, 1976, 9pp. (ED 125 845)

The concept of public marketing provides a strategy for the systems approach to community development that could facilitate the community decision-making process through improved communication. Techniques that can be adapted from the social marketing research process include the community inventory — citizen assessment of local conditions via a checklist; the reconnaissance approach — overview of information derived from key citizens or groups via small samples; group diagnosis — interviews with a small selected group of individuals; and opinion or attitude surveys — community needs as perceived by the public. An exemplary marketing approach is now operative in Yuba City, California, where traditional approaches to community development have been cast into a total system. Available from EDRS in microfiche for 83¢ or in paper copy for $1.82 plus shipping.

● Allen, Dwight W., and Christensen, Philip R. ***The Use of Communications Media to Improve the Quality of Life in Technologically Developing Nations: A Strategic Overview.*** Washington, D.C.: Academy for Educational Development, Inc., 1977, 105pp. (ED 154 838)

Designed for use in planning communications programs, this report examines strategies for using the mass communications media to improve standards of living in developing countries. A general introduction is followed by a critical examination of available communication techniques, an analytic overview of specific educational goals, and an explanation of relevant change and decision-making strategies. It concludes with 10 basic steps for creating a communication/education program for a technologically developing nation. Available from EDRS in microfiche for 83¢ or in paper copy for $7.82 plus shipping.

Two pamphlets, How to Use ERIC *and* How to Start an ERIC Collection, *are now available free of charge, while supplies last, from the ERIC Processing and Reference Facility, 4833 Rugby Avenue, Suite 303, Bethesda, Maryland 20014, U.S.A., and thereafter for $2.75 each from the Superintendent of Documents, U.S. Government Printing Office, Washington, D.C. 20402, U.S.A.* ■

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Communication Periodicals to Note

Communication Abstracts is a quarterly service providing abstracts of communication-related publications worldwide. Each issue contains some 250 abstracts of articles, reports, and books in the area of general communication, mass communication, advertising and marketing, broadcasting, communication theory, interpersonal communication, small group communication, organizational communication, journalism, public relations, radio, public opinion, speech, and television. *Communication Abstracts* is edited by Thomas F.

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Gordon of Temple University. Subscriptions are $60.00 per year for institutions, $36.00 for individuals. Subscription orders from the U.K., Europe, the Middle East, and Africa should be addressed to Sage Publications, Ltd., 28 Banner Street, London EC1Y 8QE, U.K. All other orders should be sent to Sage Publications, Inc., 275 South Beverly Drive, Beverly Hills, California 90212, U.S.A.

InterMedia is a bimonthly magazine on world communications policies and systems, including both news reports and analytic articles, published by the International Institute of Communications. Subscriptions to *InterMedia* are $35.00 per year for institutions, $30.00 for individuals. Subscription orders should be addressed to the International Institute of Communications, Tavistock House East, Tavistock Square, London WC1H 9LG, U.K.

Mass Media Booknotes is a monthly newsletter presenting short reviews of current books on mass media subjects such as broadcasting, media production, journalism, international communication, advertising, educational media, telecommunications, communication law and policy, popular music, film, and photography. Special issues published once a year include a roundup of books on film and an analysis of the year's U.S. government publications on media. Edited by Christopher H. Sterling, *Mass Media Booknotes* is available for $5.00 per year in the U.S. and Canada, $6.00 per year elsewhere. All subscriptions must be prepaid to Christopher H. Sterling, Department of Radio-Television-Film, Temple University, Philadelphia, Pennsylvania 19122, U.S.A.

Health Education by TV and Radio

The Internationales Zentralinstitut für das Jugend- und Bildungsfernsehen (IZI) (International Institute for Youth and Educational Television), an information and documentation center at the Bavarian Broadcasting Corporation, has for several years been organizing international conferences on the use of radio and television to help solve current educational and social problems. This year, the IZI is staging, in cooperation with the Division of Public Information of the World Health Organization, an International Information Week on "Health Education by Television and Radio." The conference will be held in Munich, Germany, November 17-21, 1980. The objective of the information week is to present radio and television programs from various broadcasting organizations that contribute to specific areas of health education, particularly programs pertaining to young people, and to stimulate discussion and cooperation among health education officers, program producers, and experts in communication science. Languages used in the conference will be German, English, and French. For further information contact IZI, Bayerischer Rundfunk, Postfach 20 05 08, 8000 München 2, Federal Republic of Germany.

Audiovisual Production Training

The Peruvian Audiovisual Production Center for Training (CEPAC), under UNDP/FAO sponsorship, will be offering its second international intensive audiovisual production course from September 1 to December 15, 1980. The course aims to provide a limit of 15 participants with the planning and production skills necessary for using television for training. Participants must be nominated by their institutions for the three-month course; registrations will be accepted until August 15, 1980. For further information contact CEPAC PER 76/003, Apartado 4480, Lima, Peru. Cable: FOODAGRI. Telex: 25375.

Is our new mailing label for you correct?

The Clearinghouse has just created a new mailing list, using the forms our readers have been returning to us for the past few months. Please examine the mailing label on this issue of *DCR* to make sure your name and address are accurate. If corrections are needed, please return the label to us, indicating the necessary changes.

New Clearinghouse Activities

The Academy for Educational Development has recently signed a new contract with the Office of Education of the Development Support Bureau, U.S. Agency for International Development, providing support for the operation of the Clearinghouse on Development Communication for the next three years. Under this new contract the Clearinghouse will not only continue its regular information services (*Development Communication Report, Project Profiles,* and the reference service), it will also be applying its expertise and materials in some new ways. A new mechanized information cataloging and retrieval system is being developed that will enable Clearinghouse staff to track documents more easily, create specialized bibliographies, target information to special segments of our audience, and generally use the contents of our resource collection more efficiently and effectively in serving the field.

Part of the process of developing this information system will involve the creation of a development communication thesaurus, or controlled vocabulary, which will identify the key concepts and key words in the field of development communication. We will also identify a bibliography of the core documents in development communication. The products of this process will be made available to *DCR* readers in monographs and other publications.

One activity that is expected to benefit *DCR* readers in particular is the formation of an Editorial Advisory Board for *DCR*. This board will help us to increase the number of articles written by development planners and practitioners in the developing world by suggesting authors, topics, and projects on which to focus.

Clearinghouse staff will also design and manage several seminars on development communication for USAID mission officers and their counterparts. Topics of special interest in specific communication technology skills are being solicited.

Annual IIC Conference

The 1980 Annual Conference of the International Institute of Communications will be held September 7-11, 1980, in Ottawa, Canada. The conference will include plenary sessions on the North-South dialogue and the international flow of specialized information. Discussion groups will focus on satellite communications; the regulation of telecommunications; government, industry, and the information society; the New World Communications/Information Order; and the changing media scene. For information contact Edward W. Ploman, Executive Director, IIC, Tavistock House East, Tavistock Square, London WC1H 9LG, U.K.

WIN NEWS

WIN NEWS — Women's International Network News — is a quarterly news service that reports on international events of importance to women, and on new activities and programs by and for women all over the world. It was first published in connection with International Women's Year in 1975. Women are encouraged to participate in this communication network by sending in information and news items about women's activities and achievements in their own country or region. Current subscription rates are $25.00 per year for institutions, and $15.00 for individuals. Back issues are available for $5.00 each, or for $15.00 for each annual volume. Readers are invited to sponsor a subscription for an individual or a women's organization in the developing world that cannot afford to subscribe. For more information contact Fran P. Hosken, Editor, *WIN NEWS,* 187 Grant Street, Lexington, Massachusetts 02173, U.S.A.

Translating Articles from DCR

DCR readers frequently ask us for translations of articles we have published. Unfortunately, we are unable to cover the cost of translating *DCR*. We do know, however, that some of our readers translate portions of *DCR* for their own publications or for distribution in their projects and programs. We encourage this, and we also encourage any readers who have translated *DCR* to send us their translations, so that we might share them with others.

Project Planning

(Continued from page 7)

foster a true spirit of participation and involvement.

These four assumptions, then, become the basis for all future planning activities for the Liberian Rural Communication Network:

- The communication of information is an essential part of any integrated rural development program.
- Coordinated planning is more efficient than isolated communication or extension activities.
- Two-way communication and feedback from the rural audiences are essential to a successful development activity.
- Local radio broadcasting is an appropriate communications technology for Liberia.

Implementing the Plan

Recent events in Liberia make it impossible to comment on the current status of the Rural Communications Network. However, it was agreed earlier this year that implementation would employ a systematic approach and would include the following steps:

1. *Needs assessment and determination of audience characteristics:* What do rural Liberians have to say about their own living conditions? How can we capitalize on what they already know? How do they learn new information and practices? What is the best way to gather this information?

2. *Determination of content priorities and measurable objectives:* What information must be communicated at once? What are rural people telling us about *their* priorities? How can we state desired outcomes in such a way that we will know whether or not we have achieved our intended purposes?

3. *Survey of other message sources and analysis of context:* What are the different ways in which people get information? What is the influence of friends and relatives? How can we avoid conflict among sources of information?

4. *Media and format decisions:* Although radio broadcasting is a principal means of communication, what other channels are available? What about folk art, singers, actors, dancers, and other forms of entertainment? What do we know about people's preferences? Do they like lectures? interviews? radio novels?

5. *Program writing, pre-testing, and production:* How often should we deliver the same message to a rural audience? How can we find out if the audience will comprehend a series of programs? What production techniques are appropriate to particular messages?

6. *Delivery, reception, and utilization:* Will the broadcast signals be clear and free from interference? Can we reasonably expect people to listen in groups, and to take part in discussion after the programs? How can we stimulate group listening, discussion, and action? How can we attract monitors or animators to work with organized rural groups?

7. *Evaluation, feedback, and system modification:* How do we know if our communication strategies are working? How do we gather the appropriate kinds of information from rural listeners? What steps must be taken to modify our communication activities?

Conclusion

Although progress on the Liberian Rural Communication Network has been slowed, Liberian officials have come to recognize and value the fundamentals of good comnications planning. They recognize that communications has an important function to fulfill in developing planning, and that a systematic approach to communication can yield increased benefits to rural Liberians in knowledge, attitude change, and improved practices in health, nutrition, agriculture, and family life. ■

Richard C. Burke, professor of telecommunications at Indiana University, participated in the 1977 seminar on development communication conducted in Liberia, and in early 1980 returned to Liberia as a member of a planning team along with Robert M. Morgan (team leader), Bella Mody, and David Wilson.

Bibliography on Non-Formal Education Periodicals

The Non-Formal Education Information Center at Michigan State University has recently published a select annotated bibliography of *Journals and Newsletters on Non-Formal Education and Development.* The bibliography was compiled by Lynn C. Schlueter and Jim Fritz, using materials drawn from the resource collection of the NFE Information Center. Nearly 300 journals and newsletters are listed, with a brief description and complete address for each. Copies of this bibliography are available from the Non-Formal Education Information Center, Institute for International Studies in Education, 513 Erickson Hall, College of Education, Michigan State University, East Lansing, Michigan 48824, U.S.A.

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Readers are invited to submit typed manuscripts of no more than 1000 words and to send in photographs.

Dilemma

(Continued from page 16)

Soon after the retreat, meetings were organized by the Country X nationals and expatriate specialists to air grievances and formulate suggestions for changes to be discussed with the Director. Subsequent meetings between Country X nationals and the Director proved fruitless and frustrating. The Director maintained a benign but patronizing attitude that communicated the message, "Yes, but I know best."

After many such disappointing encounters, the beginnings of open hostility were manifested — a lot of grumbling and sarcastic joking at the Director's expense of which he was unaware since he did not speak the language. When he was finally made aware of the foreign specialists' complaints, he put all of the blame for the discontent with the project onto a few specialists and labeled them disruptive.

THE DENOUEMENT:

When the hostility and disaffection among the Director's staff escalated to such an extent that he was forced to take action, he responded in a high-handed and autocratic way. He found reasons for getting rid of the expatriates he felt had been a bad influence; those designated as "non-beneficial" to the objectives of the program had their contracts terminated. This came as a blow to the local staff, since these expatriates were precisely the ones who had been understanding and sympathetic to them. When it became evident that the consensus achieved among the co-workers was not going to be respected by the Director, the staff began to form factions. Local program management close to the Director sided with him and began to harass certain of the disaffected staff members. Finally, two nationals resigned, and the enthusiasm and *esprit de corps* that the Director had set out to create through the retreat were in a shambles.

An opportunity to foster real self-reliance in rural development was thus squandered. For all of his apparent good intentions, the Director was unable (or unwilling) to relinquish his authority. Being truly helpful actually requires a great deal of humility from the helper — a willingness to subordinate one's own biases in order to listen with an open mind. The Director should never have made the pretense of democratizing the project. The tragedy is that people were given a chance at real decision-making and then denied the right to act on those decisions. It is not always possible to know what kind of harm will result from such actions — disillusionment, frustration, anger, a loss of confidence and commitment to self-sufficiency and rural development, or, more likely, all of these. A high price to pay for giving in to the authoritarian temptation. ■

Dilemmas in Country X: Candid Discussions about Failures

The author of this Dilemma, who prefers to remain anonymous, makes it clear that it is destructive to go through the motions of democratizing a project unless the project participants are to be given the right to follow through on their own decisions.

The editor invites readers of ***DCR*** *to contribute "dilemmas" — descriptions of the problems they have encountered in their own projects that might contain useful lessons for other development workers. Authors, projects, and countries can go unnamed if the author so requests.*

As a short-term consultant, I was called in by a rural development program to help set up its nonformal educational support component and to train a counterpart in the development, implementation, and evaluation of communication software and strategies. I was already familiar with Country X, having spent an extended period of time there several years earlier with the same organization, and I had maintained contact with several nationals — friends and co-workers. During my more recent three-month stay, I became involved in the events I am about to describe.

THE SITUATION:

An international organization is setting up a diversified rural development and training program in Country X. The goal of the program is to establish an infrastructure and train a staff of nationals to take over control of the program from the international organization.

THE PLAYERS:

- *Director of the International Organization:* A man of long experience, excellent qualifications, and good intentions. His experience, however, has been confined largely to the upper echelons of government administration, and although he has very good personal contacts on that level that can be beneficial to the program, he has very little knowledge of how things work at the rural village level. He does not speak the local language at all and is not inclined to learn, since all high-level administrators of Country X speak English fluently.
- *Expatriate Personnel:* A half-dozen long-term specialists in various aspects of rural development — agriculture, nutrition, family planning, literacy, etc. — all of different nationalities, hired to train and assist their Country X counterparts.
- *Local Staff:* About two dozen extension agents of varying experience and qualifications. Some have already been trained and are beginning to work in the villages to which they were assigned. Others are still being trained. The majority of these extension agents come from well-educated middle- and upper-class families (some are from large land-holding families, with highly placed social and political connections). A substantial number of these employees are participating in the program, not because of personal financial need, but rather out of a sense of dedication to the development of their country, and because this program offers them a chance to get on-site experience in rural development. Many are recent college graduates or were students during the war for independence, and many were politically active during the political confrontations that took place against the now-deposed president. It is important to note that the Director of the international organization is totally unaware of the caliber or social standing of these government extension agents.

THE ACTION:

The Director, working toward the goal of establishing a self-sufficient local organization to carry on the development program, decided to hold a week-long retreat in which all staff — local and expatriate — would participate. The idea was to create, through various workshops and discussion sessions, a cohesive group: informed, aware, and in agreement as to the needs and priorities of the development program.

The workshops dealt with various aspects of the program: communications, women's programs, agriculture, appropriate technology. Guest speakers were invited from private and governmental organizations. On the whole, all participants (the majority of whom were Country X nationals) felt that the workshops and discussion sessions were a great success. There was much interaction and discussion — and argument — about identifying real problems and appropriate means of dealing with them.

Unfortunately, the success of the seminar was the beginning of problems for the Director and His Plan for implementation of the program. During the retreat, Country X nationals began questioning the appropriateness of the existing proposal and its priorities and methods. They began to talk about restructuring the program along the lines of consensus that had been achieved during the retreat.

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Development Communication Report

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Two-way Radio Helps Deliver Primary Health Care

by Douglas Goldschmidt, Heather E. Hudson, and Wilma Lynn

The growing emphasis on the needs of the rural poor in the developing world has focused attention on creating innovative means of extending health care to rural areas. Given the shortage of physicians available to serve in rural areas and the prohibitive expense of providing a medical infrastructure to support them, health planners are turning to paraprofessionals at varying levels of training – nurses, health aides, midwives, and medics – to provide "front-line" rural health care.

However, the very isolation of rural areas creates difficulties in providing even relatively simple medical services. The delivery of drugs and supplies can take weeks or even months, and the transmission of data for and results of laboratory tests may take so long that such tests are an exercise in futility. In treating complicated cases, health workers must rely on their own limited training and skills, or risk an often difficult and expensive evacuation. Emergency referrals to hospitals may wait for days in many areas for transportation to be arranged.

Alaskan community health worker uses two-way radio to talk with physician-advisor

Aside from the various urgencies of health care, routine administrative and medical procedures may be significantly delayed or prevented in the absence of reliable communications. Further, for many of the medical personnel, the isolation of rural communities can contribute to loneliness, which induces high levels of staff turnover. Perhaps most important, without regular training and interchange of information on medical procedures, field staff can quickly fall behind in developing new skills, or even in maintaining current knowledge.

Two-way telecommunications offers some attractive solutions to the problems presented in such an environment. A two-way communication system offers the possibility of regular administrative and medical consultations, as well as a practical medium for other official and nonofficial communications.

Several technologies may be used for two-way communication: telephone transmitted over open wire, via microwave, or by satellite; and two-way radio – high frequency (HF), very high frequency (VHF), and citizens' band (CB). All of these technologies permit two-way voice communication between two sites, and some can be used for conferencing among several sites.

The various kinds of two-way radio systems most nearly fit into the category of appropriate communication technology for rural health care. In the absence of other telecommunications systems, two-way radio systems can provide for communication at varying degrees of reliability and relatively low capital cost. They are easy to maintain (although not always maintained in practice), easy to use by field personnel, and can provide years of service pending the eventual installation of regular telecommunications services.

While two-way radio systems are currently the most likely technology to be used in future rural health programs, however, they do not merit an uncritical endorsement. Two-way radio systems are almost invariably inferior to a properly functioning commercial telephone system in terms of both reliability and long-term capital and operational costs. Also, the proliferation of two-way radio systems can lead to unnecessary frequency congestion and can actually impede the development of regular telecommunications services. Nevertheless, in the absence of telecommunications services, two-way radio remains the most effective means of extending communications at the lowest cost.

Functions of a Two-way System

It is generally assumed that the most critical use of two-way communications for rural health is connecting the rural health practitioners with physicians and nurses in regional or national hospitals. Such contacts are used for consulting about a patient's condition for both diagnostic and prescriptive advice, determining whether a patient should be referred to a hospital for treatment, and following up on the condition of a patient at either the hospital or the field location.

The need for and importance of this type of communication depends heavily on the

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medical protocols of the particular project. In Alaska, the Public Health Service holds regular "doctor calls" for the rural health aides; the doctor contacts each health aide daily to provide medical consultation and handle administrative matters. These aides have minimal training (some less than three months) and frequently require skilled outside interventions. In Guyana, a "medex" – a health worker trained for one year by the MEDEX project – is generally expected *not* to consult with the physicians by radio except in the case of emergencies requiring referrals to hospitals, or in very difficult diagnoses.

The use of two-way radio systems for medical consultation thus reflects decisions made about the overall structure of the health system. The existence of the system allows varying degrees of consultation between the field and professionals, depending on the reliability of the radio system, the level of training of fieldworkers, and the availability of professional staff.

It should be understood that improvements in radio reliability generally bring about an increase in communication costs. A radio network that operates 24 hours a day is more expensive, in terms of number of frequencies and monitoring time required, than a simple HF system that can operate only during parts of the day. Thus, planners must evaluate the need for evening and weekend medical consultations when planning the radio system.

Two-way communications also plays a critical role in the administration of health programs, particularly in the distribution of drugs and medical supplies. In remote locations, epidemics or less serious outbreaks of disease may require immediate shipments of antibiotics, vaccines, and the like. However, with the unpredictable transportation and mail services available to many rural areas, it may take days, or weeks, for news of these needs to reach headquarters. Or the drug order may be received and headquarters may believe that it has been shipped, when in fact the drugs remain in a warehouse, ignored by the shipping agent. A two-way radio system can be used to monitor such shipments.

Similarly, the radio system can be helpful for ordering and shipping routine supplies such as food, furniture, fuel, and spare parts. The system allows headquarters to determine precisely what is needed if an order is vague, or to arrange substitutions if the requested supplies are not immediately available.

The radio can also be used for routine administrative and non-health-related matters, such as arranging for vacation replacements for fieldworkers, and arranging for messages to be relayed to various people at headquarters or in the field. While many of these functions do not have the same urgency as the distribution of drugs and supplies, the use of the radio not only speeds these processes along, but may help to significantly improve field staff morale. Given the generally acknowledged unmet demand for communications services in rural areas, planners should expect that there will be great pressures for using the health system for any number of general communications functions.

One of the greatest difficulties in rural medical care is arranging transportation for critically ill patients from the field to a regional or national medical center. An innovative approach to this problem is the Flying Doctor Service run by the African Medical and Relief Foundation (AMREF) in East Africa (see page 4), which links field professionals to each other, to hospitals, and to AMREF headquarters via a two-way radio system. The radios are used to alert a doctor, who can either fly to the site of the emergency or arrange for one of AMREF's airplanes to evacuate the patient.

Such unions of transportation and communications are particularly effective when both the medical and transportation systems have communications systems that allow messages to be conveyed rapidly from one to the other. For example, AMREF planes have one of the terrestrial network's frequencies, and in Lesotho, the Flying Doctor Service asked that the radio system be designed to include a network frequency in its plane.

An additional benefit of a two-way radio system, of course, is that some evacuations can be prevented if expert advice is available by radio.

The isolation of rural health workers poses problems for continuing their training or providing refresher courses. Two-way communications can help to alleviate the training problem, although the level of training made possible through two-way radio can vary tremendously according to the time professionals devote to preparing materials and the time students devote to studying on their own.

The simplest type of training occurs through fieldworkers discussing their cases during consultations in a conference-call situation. By listening in, each aide can hear varying descriptions of illnesses, learn ways of describing symptoms, and become aware of diagnoses and treatments possible for various symptoms.

A more directed approach has been adopted in Guyana. Once a week, during a general conference call, the physician presents a case that had been referred to him during the preceding week. The physician presents the symptoms, the types of diseases associated with the symptoms, approaches to diagnosis, and the like, and quizzes the medex listeners on the case.

An even more systematic approach is to present new ways of assessing medical problems through a series of presentations, questions, and follow-ups over a period of time. The difficulties here lie primarily in the time and professional effort required to develop the curriculum, and in the fact that the health workers must have time to participate in the program during the hours the radio system is operational. The limitations of HF radio systems in terms of reliability and signal quality also make this kind of intensive training difficult.

Two-way radio systems are earning an impressive reputation as a fast, inexpensive, and highly mobile way of dealing with emergencies such as epidemics and natural disasters. For example, during the 1976 earthquake which devastated many areas of Guatemala, Plenty, a voluntary organization, set up a two-way radio system that was one of the first emergency communications systems to operate during the disaster (see *DCR* 28). The system linked relief teams, ambulances, and local health workers with hospitals, clinics, and fire emergency units in the hard-hit lake country of Guatemala. In most villages, the radios were the only link with the outside world.

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ENTER THE *DCR* PHOTO CONTEST!

A picture is worth a thousand words! *Development Communication Report* is sponsoring a contest for photographs that illustrate "development communication" – that is, communication being used to support development projects. Photographs of any kind of communication process or medium – folk theater, face-to-face extension work, radio listening groups, educational television, film, print materials, satellite networks, etc. – will be eligible to win.

A selected jury will judge entries in two categories, black-and-white and color. Entries will be judged on the basis of content, visual impact, and technical quality. A prize of $100 will be awarded to the first place winner in each category, $50 to each second place winner. Prize-winning photographs will be published in future issues of *DCR*.

Entries may be either prints or 35mm slides. All entries should be in our hands by January 31, 1981. **Each entry must include the name and address of the person or organization submitting it and a short caption describing the photograph (where it was taken, what group or project it shows).** There is no limit to the number of photographs an individual or group may submit. All photographs entered in the contest will become the property of *Development Communication Report* and, if published, will carry a credit to the photographer.

Mail your entries to: Photo Contest, *Development Communication Report,* 1414 22nd Street, N.W., Washington, D.C. 20037, U.S.A.

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System Components and Costs

The primary reason Plenty was able to set [illegible] the Guatemala disaster relief network so [illegible]ckly is that two-way radio technologies are fairly simple. The basic components of any two-way system, regardless of frequency or power are:

- a *transceiver* (a transmitter/receiver) with crystals that oscillate at the given frequency, and with a microphone, generally of the "push to talk" variety, that activates the transmitter only when a button is depressed;
- an *antenna* for radiation and reception of signals, either dipole (generally suspended between two poles or trees), whip (a vertical antenna that may be pulled out of the radio or mounted outside, like a car radio antenna), or yaggi (a vertical antenna like a VHF TV antenna, mounted outside);
- a *power supply,* either AC (operating off of mains power — house current — by plugging in the set), or DC (operating off of a storage battery such as an automobile battery, which may be recharged by connecting a battery charger to the mains power, to a small diesel generator, or to one or more solar collector panels, generally mounted on the roof).

Of the various two-way radio technologies, [illegible]igh frequency radio is perhaps the most com[illegible]on. High frequency (HF) communication works by bouncing radio waves off the ionosphere and can cover great distances of hundreds or thousands of miles, with varying reliability. HF radio offers the most practical means of communication where distances exceed line of sight between locations (where stations "see" each other electrically) — generally 50 miles or more.

Very high frequency (VHF) radio can be used where distances between communities are less than 50 miles, or where a hill or mountain can be used for a repeater that allows the signal's line of sight to cover a much greater area. The reliability of VHF communication is generally good within its limited range.

Citizens' band (CB) radios offer very inexpensive communication over short distances of about 5 to 20 miles. CB radios are small and portable, but are generally not designed for the rugged conditions of field settings.

Definitive cost data on two-way radio systems are difficult to provide, given differences in project requirements, terrain, atmospheric conditions, import duties, shipping costs, and the like. It is, however, possible to provide at least some idea of the relative costs [illegible] different technologies, and some of the fac[illegible]s that influence costs.

Based on data from Guyana, the purchase cost of a typical high frequency two-way field radio site would be around U.S. $1,325.00, the bulk of this for the four-channel radio ($900). Radios for longer distances and for base stations, requiring more power, would be more expensive. Non-U.S. equipment, particularly from Europe or Canada, is likely to be about 50 percent more expensive than U.S. equipment. For the power supply source, solar cells are currently about twice as expensive as diesel generators, but they have little or no operating expense, and costs of solar cells are gradually decreasing.

VHF radios are somewhat less expensive than HF and can be used with a yaggi, or TV-type, antenna, rather than the dipole antenna required for HF systems. The cost of a typical VHF installation with a 50-mile operating radius would be approximately U.S. $900.00. For longer distances, repeaters would be necessary, and costs would be significantly increased.

Citizens' band radios are very inexpensive ($100 to $300) and may be used with a built-in whip antenna. The power supply could be throwaway batteries (an ongoing operational cost) or rechargeable nickel cadmium batteries requiring a power source for the battery charger.

These costs are only part of the *capital* costs of a two-way radio system. Total capital costs include the capitalized cost of the equipment plus its installation, spare parts, and power supplies. System planners must also take into consideration the *operational* costs — maintenance, power requirements, operators, equipment depreciation.

The operating costs of a system may vary according to:

- whether maintenance is done by health agency staff, a telecommunications agency, or expatriates;
- the life of the equipment — generally estimated at five years, although solid-state radios protected from salt and dust should last considerably longer;
- the power supply;
- field maintenance — whether an annual field visit is scheduled or equipment is simply repaired when broken;
- accessibility of sites for shipping equipment and for maintenance visits;
- whether radio operators are hired and paid for that job alone or operate the radio as part of their clerical or clinic duties.

In Guyana, the initial estimate that maintenance would cost $150 per site per year has been revised upward. In Sudan and Lesotho, the cost of shipping and installation was estimated at 80 percent of the capital cost of the equipment. Generally, the least expensive system will be installed and repaired by local technicians (usually in the telecommunications ministry) and powered by solar arrays or off of mains power.

Problems with Two-way Systems

While it is often difficult to establish the reasons for failure of two-way radio systems, there are several major causes of system breakdown and failure: poor system design, insufficient training of users, inadequate operational procedures, lack of maintenance protocols, lack of spare parts, and power supply problems.

Faulty system design occurs most often when attempts are made to minimize initial capital costs. Such savings may be attempted by purchasing older or used equipment or by purchasing less expensive equipment, such as CB radios, in the belief that they will provide the necessary service. In fact, with older equipment, operational problems are frequent and are compounded by the difficulty of getting spare parts, and older equipment consumes more power. As already noted, CB radios cover a limited distance and are not very reliable.

Operational procedures are also a source of radio problems. Such problems range from operators being careless with handling the microphones or placing objects over the heat exhaust of the transceiver, to lax security and placement of transceivers in poor locations such as areas exposed to moisture or heat, dust or salinity. For example, in Guyana, the main station of the MEDEX radio system was directly exposed to humid salt air blowing in off the ocean. Without remedy, this radio would have been corroded beyond repair in less than two years.

Lack of training of operators can result in early damage to equipment: radios are allowed to burn out or corrode, batteries are not charged properly, battery cables to battery terminals are reversed, or gasoline is not properly mixed with oil for generators.

Maintenance protocols are a major consideration in the success of two-way radio systems. While solid-state radios should operate for long periods of time without the need for maintenance by a technician, some periodic preventive maintenance is advisable, as lack of routine maintenance may severely shorten the life of the system. For example, inspectors in Lesotho found that many of the antenna installations needed repair — antennas had broken, radios were not grounded, and poles were leaning dangerously. In the Pacific, moisture in long grass around the guy wires for the poles rusted the couplings holding the guy wires. The guys broke, the poles fell over, and the antennas came down. Cutting grass can extend the life of a radio system!

One reasonable approach to system maintenance is to contract with the local telecommunications authority for installation and maintenance. In many projects, there is reluctance to use the telecommunications authority, whether because of its operational record, a traditional lack of cooperation among ministries, or the cost. However, the telecommunications authority usually is best suited to maintain the radios because of its own supply of skilled technicians and established repair facilities.

Lack of spare parts can also threaten the

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A Successful Medical Radio Network in East Africa

by Michael S. Gerber

The governments of many Third World countries, particularly those experiencing significant political unrest, are understandably sensitive to the political implications of installing extensive two-way radio systems linking rural outpost to rural outpost and to population centers. As a result, planners often hesitate to explore the potential of two-way radio for helping to solve health care delivery problems. One agency has proven, however, that it is possible to operate a highly successful two-way system with full government support.

The African Medical and Research Foundation — AMREF — operates a medical radio network with stations in Kenya, Tanzania, the Sudan, and Uganda. It is the only organization that currently has permission — and Ministry of Health financial support — to operate across the borders of Kenya and Tanzania. AMREF has earned this privilege not only by taking the time to win the confidence of the governments concerned, but also by providing services of unquestioned value to rural areas where there was no existing structured program for health care delivery.

AMREF was founded in 1957 to provide clinical services, mainly mobile health care by ground and air teams, to rural areas of Kenya and Tanzania. The air teams — "Flying Doctors" — provided surgical services to hospitals and clinics where there were no fully trained health professionals.

In 1961, AMREF began installing two-way radios in a number of selected mission hospitals to let doctors know when emergency evacuations were required and when surgical teams were needed at remote clinics and hospitals. The radio network has since developed into one of the largest medical radio communication systems in Africa, with 93 stations — 50 in Kenya, 38 in Tanzania, 4 in the Sudan, and 1 in Uganda. As the system has expanded, so have its purposes. Isolated stations without telephones or good transportation use the system to communicate not only with the central station in Nairobi but also with one another, and not only for medical consultation but also for discussing community health problems, ordering drugs and supplies, transmitting laboratory reports, discussing administrative matters, and planning and coordinating Flying Doctors' visits.

The medical institutions participating in the network are both mission- and government-run, and include consultant hospitals, regional or provincial hospitals, district hospitals, health centers, dispensaries, and mobile units. The radio network covers most of the remote, frequently arid or semi-arid regions of Tanzania and Kenya. Tanzania's system is limited mainly to hospitals, allowing for communication along established administrative lines from district to regional to zonal hospitals. The Kenyan system also provides for district medical and public health teams to communicate with primary health facilities, and in some cases with mobile units, within their district. In an evaluation effort now in progress, AMREF is trying to determine whether the communication needs of remote health facilities are satisfied by the present network, and, if not, what is needed to provide more complete coverage.

AMREF is also helping the Ministry of Health in Malawi to establish a medical radio communication system. A trial system of 10 radios was installed in 1977, and the ministry has since requested support in extending the network to 6 additional sites.

Equipment and Maintenance

The AMREF network uses mainly PYE SS 130 high frequency radios and is in the process of replacing a few older models still in operation, using funds provided by the Netherlands. Standardization of the equipment will facilitate service and maintenance and allow for the consolidation of testing equipment. A pilot effort is underway in the Lamu area on the Kenyan coast to test the use of solar panels as an alternative energy source for recharging batteries. If the results are satisfactory, the use of solar energy will be extended to other stations in the near future. AMREF's full-time radio engineer is responsible for installation, routine maintenance, and servicing of the entire system, as well as for repairs of all radio equipment.

Operation and Personnel

The radio network uses three frequencies, two of which are monitored directly by the control station (Foundation Control) in Nairobi, and the third by a control station located at the Kilimanjaro Christian Medical Centre in Moshi, Tanzania, backed up by Foundation Control. In addition to these HF stations, a small VHF system is operated out of the Lamu District Hospital, connecting the district headquarters with three outstations within a radius of 35 miles.

Foundation Control Nairobi operates five days a week from 8 A.M. to 12:30 P.M. and from 2 P.M. to 4:30 P.M. These hours are being reconsidered in the light of requests for an expanded schedule that would include weekend hours. Nighttime operation is generally not possible because of atmospheric conditions.

Apart from daily calls to Foundation Control, several outstations also use the radio to communicate with other stations in their geographical area. In fact, preliminary findings from the evaluation study indicate that the traffic within these groups of outstations is increasing markedly in comparison with the traffic between outstations and Foundation Control. In 1978, when the system had 82 stations, total traffic for the network was more than 2,200 calls per month. Of these, 829 were handled by Foundation Control in Nairobi, 372 by the control station at Moshi, and more than 1,000 calls were made between outstations. In an attempt to avoid confusion and congestion during the limited airtime available, Foundation Control now allocates fixed daily times for each group of outstations to hold their local conferences.

The radio room at Foundation Control is staffed by four fully trained nurses who, in addition to monitoring the radio, assist AMREF's Flying Doctors in surgery. Operators at the outstations vary a great deal in terms of their professional training and experience. At some district hospitals, the radio is operated by a senior secretary who passes messages back and forth, directing medical matters to doctors or medical personnel, administrative matters to the hospital superintendent, drug and supply requests to the pharmacist, and so forth. At other hospitals, the doctor or nurse in charge operates and coordinates all radio traffic. At smaller stations coordination is difficult, as there is usually no more than a total staff of four.

Procedures to operate the radio are usually explained by the technician who installs the radio, and some in-service training is given by the AMREF pilots and medical staff during medical outreach visits. However, the high rate of staff turnover, particularly in government institutions in remote areas of the country, tends to affect the communication system adversely in terms of both the quality of cooperation between stations and the extent to which the radio is used. AMREF is trying to devise measures to improve the training of operators so that new staff will be able to use the system with confidence.

Use of the Radio

A number of factors influence the radio's use and the nature of radio traffic. In addition to the interest and training of the staff, the use is influenced by characteristics such as the type and level of the participating institution (mission or government, hospital or dispensary), the distance to the closest referral institution, the staff's confidence in the medical expertise at the referral institution or district headquarters, the effectiveness of the regular supply system, security conditions, and so forth.

AMREF's evaluation includes a systematic analysis of the present functions and uses of the communications network, using data from the log maintained at each station. Of the

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Project Planning

This regular feature of DCR highlights for development planners the process of planning a communication project or the communication component of a project. Readers are invited to submit descriptions of their own project planning experiences, or suggestions for topics in communication planning that they would like to see treated in future issues.

An Approach to Planning a Two-way Communication System

by Paul Zukin

The past few years have seen considerable interest in the role of two-way communications, both to assist the development process in developing countries and to augment health and other services in isolated rural communities of developed and developing countries alike. This interest has been stimulated by such technological advances as solid state devices (transistors and integrated circuits), solar power, and satellites, and has been brought into perspective by the recent emphasis on appropriate technology.

Although two-way communications has many potential uses in any country, its application to rural health care has received most attention to date. The presentation that follows will discuss communication planning in the context of a health service model. The planning approach that is described has been used to develop a successful national health planning unit and to design a primary health care program in Ghana, as well as to plan a number of hospital and health services projects in other countries. The approach, however, is general in nature and therefore is applicable to planning for products or services in any sector.

The Planning Process

Effective planning requires an organized approach to achieve desired goals. If an organization is to provide a product or service it must first establish its policies or operating rules. These provide guidelines on how the organization or project will function and essentially spell out what will and will not be accomplished. Although not all policies are formalized as written statements, a written policy is preferable, as it leaves less room for the intent of the activity to be violated.

Once policy guidelines are set, planning is carried out for the subsystems that make up the organization. In a commercial organization these are the *marketing, production, human resources,* and *financial* subsystems. At first glance it would seem that not all of these terms would be appropriate in planning for service organizations. However, on closer analysis, the conceptual framework holds.

In many circles the term "marketing" is not well understood and may have negative connotations, suggesting that a seller is trying to convince a consumer to purchase something he or she does not need. This misconception can block recognition of the fact that the functions encompassed in the marketing concept play an important role in planning a communication system. These functions include:

- assessing the needs and demands for communications to support health care and/or other activities;
- deciding on the types and characteristics of communication equipment, facilities, and services that will meet these needs and demands in a practical, affordable, and cost-effective manner – that is, the communication system design;
- designing a program to promote the use of communications to support health services;
- considering the effect of price (charges for services) on the use of communications.

The production subsystem includes the sequence of activities that will result in the desired communication system. These activities must occur at the right time, place, and rate, and with the proper emphasis. They include securing and installing appropriate communication hardware, power supplies, and antennas or telephone lines; devising maintenance programs; and providing for supplies and spare parts.

The human resources subsystem focuses on personnel needs assessment and staffing, as derived from needs projections and the production subsystem. It includes forecasting training needs and establishing training programs, developing human resources, assessing and evaluating performance on the job, developing rewards and incentive systems, and establishing conditions of service for employees.

The fourth subsystem, finance, is concerned with sources of funds, both for capital expenditures and for operation and maintenance of the communication system; the use of funds, including expenditure controls; and the costing of equipment, facilities, and services.

The Planning Pyramid

In planning for a communication system, one subsystem – marketing – analyzes and specifies communication needs and demands and how they can be fulfilled, and three subsystems actually achieve fulfillment. Planning is the process of integrating these four subsystems so that they come together in a single focus or "mission."

The four subsystems rarely mesh neatly. There are almost always more needs and demands than can be met. Even if there were a communication system that had the equipment and facilities to meet all of the needs of its clients, it probably would not have enough qualified people to operate and maintain it. Even if all of the required staff were available, financial and other resources might be limited. There are gaps or limitations in what can be provided, given scarcity of health workers and other resources, and taking into account political, legal, cultural, and other constraints. In the process of planning, the organization must adjust its goals to accommodate these realities. This means setting priorities, satisfying some needs and ignoring others.

One way of conceptualizing the planning process is to visualize a "planning pyramid," in which each subsystem makes up one side of the pyramid. In effect, the planners begin the planning effort at the bottom of the pyramid and travel upward around the sides, passing again and again through each of the subsystems, narrowing the gaps and accommodating the limitations. In this process they establish and revise priorities. By the time they arrive at the top of the pyramid, they should have identified a communication system that will meet the recognized needs and will specify which services will be provided, how, and using what resources.

Communication System Issues

In negotiating the planning pyramid for a two-way communication system in support of a health program, planners must analyze, weigh, and resolve a number of significant issues in each of the four organizational subsystems, only some of which are listed below. Under the marketing subsystem, for example, the following issues will emerge:

- Do the information needs in providing personal health care include:
  - exchange of information between health workers;
  - consultation on individual patients;
  - patient referral;
  - patient-family contact?
- Do the information needs in managing the health care system include:
  - improved management of personnel, drugs, supplies, transport, and other resources;
  - management conferences and in-service training;
  - reporting financial and other health system data;
  - improved epidemiologic surveillance;
  - strengthening health worker morale?
- What technical features and options will be chosen in designing the system?
  - line communication (telephone) or radio;
  - if radio, one-way or two-way;

(Continued on page 6)

(Continued from page 5)

- satellite or non-satellite transmission;
- amplitude modulation (AM), frequency modulation (FM), or single side band (SSB);
- high frequency (HF) or very high frequency (VHF);
- solid state or tubes (valves);
- AC mains, battery, or solar cell power;
- transmitting frequency;
- power of transmitter;
- antenna type.

- Will the system be dedicated to one user group (health services) or non-dedicated?
- Who will have access to the system, and under what circumstances?
- What provisions are there to ensure that communicated requests can be met?
- What will be the relationship between the communications and transportation systems?
- How will political and security considerations be handled? Legal and regulatory?
- What are the sociocultural aspects that must be considered in designing the system?

Under the production subsystem, the issues will be related to:

- Equipment selection, procurement, and installation;
- Equipment maintenance;
- Protection against misuse and theft;
- System performance evaluation.

Under the human resources subsystem, planners will have to provide for:

- Inclusion of training in the use of communication equipment early in the training programs of health workers at all levels, particularly of those working in rural or isolated areas, so that its use will be ingrained and its value recognized;
- Training in maintenance of the equipment.

Financial subsystem issues include:

- Where and how funds for the purchase of communication equipment can be obtained;
- Funding for operation and maintenance;
- Foreign exchange considerations.

In sum, planning a two-way communication system for a developing nation requires an organized approach and careful analysis of many issues and questions, including technical matters, distances to be covered by the system, weather and terrain, institutions to be involved, available funds, and any number of considerations not mentioned here. There are significant differences among developing countries, and no "cookbook" method to planning a communication system is possible. However, a rational and comprehensive approach to the entire system will give the communication system that results a greater chance of success. ■

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Botswana Takes Participatory Approach to Mass Media Educational Campaign

by Martin L. Byram, Catherine B. Kuate, and Kutlwano Matenge

In a time when development planners are coming to recognize that community participation is an indispensable ingredient of successful development projects, mass media educational campaigns are often criticized for being inherently a top-down, centralized, nonparticipatory communication method. Critics acknowledge that mass media campaigns have the advantage of being able to provide education to large numbers of people, including the illiterate, at a relatively low cost. On the whole, however, mass campaigns have tended to focus on messages selected by central agencies and institutions, and the planning and preparation has also tended to rest with them.

Centralization is not necessarily wrong, of course. In many instances, such as the mass sanitation and preventative health campaigns in China and the radio learning group campaigns in Tanzania (see *DCR* 17), the case can be made that centrally planned campaigns have had significant social and economic benefits. Nevertheless, consideration needs to be given to the potential for developing a more participatory approach to mass campaigns.

Experience has shown that there are advantages to involving people directly in planning and running the educational programs that concern them. Such involvement helps to ensure that the priority concerns of the community are addressed realistically, and it encourages people to take advantage of the benefits of these educational programs. In making the case for a more participatory approach, however, we should not lose sight of the fact that many development problems are so massive that very often they can be tackled effectively only by taking a large-scale approach. What is needed, then, is a balance between the obvious benefits of a mass campaign approach and those accruing from a more decentralized and participatory approach to adult education.

Such a balance was sought in a recent mass campaign organized in the Kalahari Desert region of western Botswana, an area with a widely scattered population of some 50,000 people. The campaign, *Lesedi la Puso* ("Understanding Government") used a radio learning group format: organized groups met at regular intervals over a short period of time to listen and respond to information on specific topics broadcast over the radio and supported by print and visual materials. This radio learning group campaign was organized by Matsha Community College (a new multipurpose educational center), with the help of the four district councils and other government departments in the region.

The campaign was planned to respond to villagers' requests for more information about how government works and how people could get things done for their communities. Before the campaign, people had often expressed in village meetings their feeling of distance from government, indicating that they lacked basic information about government and its procedures and about their own rights and responsibilities as citizens. Similarly, local civil servants felt that the villagers' lack of understanding about government hampered development efforts.

A radio learning group (RLG) campaign seemed a good approach to this problem:

- Radio was the most economical means of reaching out to the scattered settlements in the region, an area which covers about half of Botswana's land surface.
- A learning group approach (group meetings led by locally selected and trained voluntary group leaders) seemed the most efficient way of involving large numbers of people in an organized learning situation in an area where there are relatively few extension workers.

Furthermore, Botswana already had experience with mass campaigns, having conducted national radio learning group campaigns in 1973 and 1976. The RLG approach had been tested, and there was a body of knowledge and experience in the country on which to build.

The two previous campaigns had been based on centrally conceived issues, one on the third national development plan and the other on the government's proposals for a tribal grazing land policy. In contrast, *Lesedi la Puso,* although initiated by civil servants, was planned in response to specific concerns identified in the villages, and there was a conscious attempt to develop a participatory and decentralized approach throughout the campaign. Because civics education is a potentially sensitive area, it was necessary to get central government approval. Once this had been obtained, however, control of the campaign resided largely within the region, with a minimum of dependence on central government agencies.

Since the campaign was a regional program, it allowed for some experimentation in developing a more participatory approach to mass campaigns, efforts that are best illustrated in the following aspects of the campaign's organization:

1. village survey;
2. production of materials;
3. processing feedback from the groups.

The Village Survey

The central theme of the campaign – "government and the citizen" – represented the generalized common concern about government's remoteness and villagers' lack of familiarity with government practices. In order to prepare study materials, this generalized concern had to be translated into something more concrete. A baseline survey was needed to identify the specific gaps and misunderstandings that were of greatest concern to the villagers and to ensure that the materials produced reflected these concerns. Eight university students were employed to carry out the survey, working in teams of two. During their three-day training session the students pre-tested the draft questionnaires that had been prepared for the survey, using an open-ended interview method to encourage the villagers to express their opinions freely.

The survey offered the first real opportunity to involve villagers in the campaign. It was considered important that when the research teams visited a settlement they would not simply collect data and then depart, but rather would use the occasion to discuss the campaign with the villagers and to encourage the villagers to start thinking collectively about the issues they considered to be important. When research team members visited a settlement the intended procedure was:

1. They would begin by holding a village meeting to introduce themselves, describe the purpose of their visit, and discuss in general terms the issues, concerns, and opinions that people had about government and village development.

2. After the meeting, they would interview villagers to obtain more detailed information on issues raised at the meeting.

3. Before leaving the village they would report to a second meeting to summarize the information they had collected, giving people a chance to verify it and discuss further any points of particular concern to them.

Unfortunately, it was not always possible to follow this process through in its entirety. The research teams did not have their own transport and had to rely on others to get from one village to the next, thus it was not always possible to arrange for the first village meeting. However, in almost every case a meeting was held before the team left the village, and people seemed to welcome the chance to listen to and discuss the results of the survey.

The data from the village survey was analyzed and documented village-by-village, and district and regional summaries were prepared. Although the survey data gave only a general outline of village problems and people's concerns about government, it was a useful source of information for selecting specific topics and preparing materials for the campaign. It gave a clearer picture of the issues and identified areas of concern that the organizers had not originally seen as a problem.

Production of Materials

Extension officers from the campaign region met together in a one-week workshop to identify 10 specific campaign topics and to produce the outlines for the materials that were to make up the campaign package for each topic: a radio program, a study guide, a flipchart, and discussion questions. Using the information from the survey report and their own knowledge of the region, the extension officers selected 10 topics on civics education for the campaign, taking into consideration such questions as:

- What topics are of relevance to the general population of the region, and not just to a minority?
- What can the districts cope with in terms of increased demands on their services as a result of the campaign?
- What topics can the districts deal with in terms of providing follow-up nonformal education programs?
- What information will be useful to the districts for planning future development and extension activities?

The topics they chose were voting and elections, elected representatives, the civil service, cooperatives, water, health, education, wildlife, local government tax, and district development planning.

Once the topics had been selected the workshop participants divided into groups to work out the themes and the specific objectives for each topic. For example, it was decided that the program on voting and elections should contain information on why people vote, who can vote, how to vote, and deciding whom to vote for. The group worked together to identify the detailed points to be included in the materials for each objective – the basic technical data, major policy issues, and significant examples from the region. The first drafts of the campaign materials were prepared from this information. By the end of the week, workshop participants had recorded improvised radio dramas, written outlines of the study guide chapters, drafted discussion questions, and, with the aid of an artist, sketched out ideas for flipchart pictures for each of the campaign topics.

The preliminary outlines provided the basis for the learning package that was developed for use by the radio learning groups. Extension officers who had been involved in the workshop wrote the final versions of the ten individual chapters of the study guide. The Kweneng District School Inspector, for example, wrote the chapter on education; the Ghanzi District Council Secretary wrote the chapter on elected representatives. In addition to providing factual information, each chapter included discussion questions and advice on where people could go to get further information after the campaign was over.

Placing the production of materials in the hands of the local extension staff was important. It meant that the significant decisions on campaign content were made by people who worked and lived in the campaign region, and that the campaign materials contained local information directly relevant to that region. It also meant that the extension officers – the people responsible for actually making the campaign work – had a vested interest in seeing the campaign succeed. The first workshop was important psychologically. It was the first time the four districts had come together on the campaign, and when they did, they made some clear, practical decisions that shaped the whole course of the campaign.

The final versions of the radio programs

A meeting of one of the Lesedi la Puso *radio learning groups*

were produced by the extension workers in a second workshop. Using the ideas generated earlier, they worked out more detailed dramas and recorded these in the Radio Botswana studios. A technical information section was later added to each program; in most cases this consisted of an interview or talk given by a council or government officer. The ten 30-minute radio programs were broadcast over a five-week period in June and July of 1979.

Feedback from the RLGs

One of the objectives of *Lesedi la Puso* was to obtain villagers' views and opinions on various aspects of government policy and practice. This consultation aspect of RLG campaigns has received considerable attention in Botswana. In the 1976 RLG campaign on tribal grazing land, for example, over 25,000 feedback forms were mailed in by the radio learning groups and were processed by government to obtain the grassroots reaction to the proposed changes in the land tenure system.

The organizers of the *Lesedi la Puso* campaign realized that the campaign provided the districts with the opportunity to consult people on future district development plans. Data from the groups could have an immediate impact on a government district planning exercise that was to take place at roughly the same time as the campaign. In effect, it would mean that the radio learning groups would be involved not only in discussing the campaign content but also in contributing to the planning of facilities and services for their villages.

Discussion questions and report forms provided the mechanism for this consultation. The groups were asked to record their responses to the campaign discussion questions, and any questions they wanted to ask, on a report form which they returned to their district centers. In each district center the responses were analyzed question-by-question and topic-by-topic and recorded on summary sheets. The summary sheets gave an overall picture of group responses for each question, which district staff could then review for development planning purposes.

Questions sent in by the groups were, in most cases, answered by district staff. Questions relating to national policy issues were referred to central government ministries. Answers were broadcast over the radio in a series of 16 Answer Programs for a two-month period immediately following the campaign broadcasts. During this period 336 questions were answered.

A Critique

The evaluation of the campaign suggested that it had been successful. Over 250 radio learning groups involving some 3,000-3,500 people had been organized in an area where communication is extremely difficult and the population is scattered. The results showed that there was a definite increase in people's knowledge and awareness of government and of how they can participate in the development process. However, it is worth taking a closer look at the campaign to determine to what extent the attempt at developing a participatory approach was successful.

First, it is clear beyond debate that the campaign was organized in response to the villagers' previously expressed concerns. The village survey process then gave the people a chance to express their concerns in more specific and detailed terms. However, although the survey gave a clearer picture of people's perceptions of government, if it had been organized a little differently, villagers could have been more involved in actually selecting the campaign topics. If, at the second village meeting, the villagers had been asked to identify perhaps the three issues that they considered to be the most important, there would have been some indication of what they saw as the priority topics. A combined list of the priorities from all the villages would then have provided a basis for selecting the campaign content, rather than having government officials make arbitrary choices from the general information collected. Furthermore, the process of selecting the important issues would have helped deepen the people's understanding, as they would have had to decide why one issue was more important than another.

If this were taken a step further, one might ask how villagers could be involved in the actual preparation of materials. As it was, once the village survey was over, villagers were not directly involved in the campaign again until the radio learning group meetings. Obviously it would not be possible to involve large numbers of people in the production of materials, yet the production process employed in the campaign did help to demystify the preparation of materials and demonstrated that non-technical people can produce good educational materials.

Logically, then, there seems to be no reason not to have involved village representatives, and not just extension officers, in the materials production process. In a workshop situation village representatives would have been equally capable of selecting topics and establishing the content and format of the materials. Any fears about levels of literacy could have been overcome by having village representatives and extension officers work side by side, with the extension officers taking responsibility, as they did in the campaign, for actually producing the written materials once the basic ideas had been discussed. There would, of course, be no literacy problem with the recording of the radio programs. This combination of village representatives and extension officers would have helped to overcome the tendency of extension workers to be biased toward an official perspective, as the villagers would be more likely to base their ideas and suggestions on their own experiences in the villages.

Finally, one needs to ask how effectively the feedback from the groups was used. The dangers of giving people a false sense of participation in the formulation of development policies have been raised by others in the p[illegible]. In the case of *Lesedi la Puso* the feedback [illegible] give some guidance to district planners, but the information was not used as systematically as it might have been. This was basically an organizational problem that could have been solved by building district meetings into the campaign to discuss the summary sheets and systematically draw out the points that were of significance to development planning.

Of course, all of this is hindsight. Just as in any adult education program there were real organizational constraints involved in *Lesedi la Puso*. Organizing an RLG campaign is a mammoth task involving a great deal of hard work. *Lesedi la Puso* was organized by district staff who had to carry on their normal duties at the same time. Four different districts were involved, and the staff had no opportunity to meet together on a regular basis. There was only one person working full-time on the project, the Matsha coordinator. Once final approval had been given by all the parties involved, only 15 months remained before the campaign was to begin. Given these kinds of constraints and the heavy work load, it was not always possible to do things in the most desirable way; in some instances things w[illegible] rushed and ideas were not fully developed.

In spite of these constraints, *Lesedi la Puso* did demonstrate some of the possibilities for a more participatory approach to mass campaigns. This is not to say that there was no centralized planning, for clearly there was, although in this case it was at the regional level. However, in trying to strike a balance between centralization and participation, the campaign gained some of the advantages of each. The points made above suggest that with some organizational adjustments in such areas as content planning, materials production, and feedback processing, more participation in the planning of mass campaigns can be encouraged without losing the benefits of scale. ■

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A report on this campaign, Lesedi la Puso: A Radio Learning Group Campaign in Western Botswana, *is available from the Boipelego Education Project, Ministry of Education, Botswana.*

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A Communicator's Checklist

1 ***From the Field: Tested Participatory Activities for Trainers,*** compiled by Catherine D. Crone and Carman St. John Hunter (New York: World Education, 1980), 148 pp.

The complexities of teaching adults are becoming apparent to an increasing number of individuals who, although not trained in adult education, find that the effectiveness of their work depends on their abilities to facilitate adult learning groups. *From the Field* is a practical tool not only for the skilled trainer but also for the individual who, having been exposed only to traditional educational methods as a learner, needs to become aware of nonformal education methods that have been proven successful with adults. The volume contains approximately 50 activities and exercises designed and tested in the field by established trainers and consultants, adapted to a format that can be easily understood, used, and adjusted when necessary to a wide range of situations.

Although *From the Field* was originally designed to help trainers prepare other individuals such as teachers, fieldworkers, and community organizers, its applicability is not limited to any particular content area. The key is the process it facilitates, and that process is highly adaptable to any number of educational situations. The approach it supports is participant centered and emphasizes mutual learning. Thus, its implementation requires that some individuals shed their traditional biases and preconceptions about learning in order to create valuable experiences through "learning by doing." The trainer is urged to be a facilitator, a consultant, an initiator, a listener, and a learner who also grows from the experiences shared with the participants.

From the Field is meant to be used as a resource book from which the trainer picks and chooses the most appropriate activities from a varied collection. The binder format is designed in such a way that the logical development of an effective learning experience is reflected in the arrangement of the sections, from forming a working group through evaluating sessions. Each section is preceded by a brief discussion of the particular training concept being addressed and is followed by diverse activities from which the trainer can choose. Section I suggests activities to establish the atmosphere of trust and cooperation necessary to the success of a learning experience and helps to establish participant and trainer expectations. Section II eases the mutual discovery of needs and examines means for collecting information from and about learners. Section III addresses methods to insure the necessary link between participant needs and appropriate approaches and techniques, and it encourages adults to take an active role in their own learning. Activities for evaluating learning sessions and trainers' performance are stressed in Section IV. While the first four sections reflect the logical flow of training design and implementation, Section V provides models and opportunities that can be used to help the participants practice their own skills as educators in planning and testing learning activities.

The real practicality of *From the Field* is appreciated most when one is implementing some of the suggested exercises. Even the layperson with a minimum of expertise feels a sense of security in testing an activity. The format on which each is based is not overly simplified and explains why the trainers chose the particular activity, the setting and materials used, steps for conducting the activity, and an explanation of what happened when it was originally used. The reader is given the opportunity to judge whether or not the activity would suit his/her respective group needs. There is also the freedom to vary the activity. One is left with the sense that the authors would prefer that their audience be creative with these basic exercises. The collection is sensitive to the wide array of group needs with which a trainer is faced, and if an activity in a particular section is not applicable, there is usually one that follows or can be varied that is.

One area that is treated, for example, is the difficult moment for many trainers, experienced or novice, of initially encountering a new group. *From the Field* suggests several approaches so perceptive of basic human interaction and group process that one exercise, "The Ice Breaker," was used successfully with trainers in Indonesia and with representatives of social service groups in Panama, with no basic changes except language. An exercise entitled "Discussing an Article," originally used to engage adults from rural New York in an active discussion about their roles as teachers, was slightly altered and used to help a Central American training team establish the training philosophy on which it designed a series of workshops. The use of an exercise on "How to Assess Learning" demystifies the seemingly difficult task of evaluation to the point that it becomes manageable. The participants realize that they already have evaluation skills that can be perfected even more.

From the Field is a resource that stimulates the participatory nonformal education process by offering basic tools for becoming a creative and innovative trainer. Although geared to educate educators, the style and philosophy are applicable to almost any training situation, and the widespread use of the resource among trainers supports the philosophy that innovative and active participation in adult education is the key to successful learning experiences.

Available for $8.00 plus postage from World Education, 1414 Sixth Avenue, New York, New York 10019, U.S.A.

Reviewed by Jan Elster, a Washington-based training specialist.

2 ***Training for the Cross-Cultural Mind: A Handbook for Cross-Cultural Trainers and Consultants,*** by Pierre Casse (Washington, D.C.: Society for Intercultural Education, Training, and Research, 1979), 228 pp.

In *Training for the Cross-Cultural Mind,* Pierre Casse has prepared an appetizing "cookbook" with detailed plans, exercises, and readings for conducting cross-cultural training. He defines cross-cultural training as a "systematic way of acquiring or modifying knowledge, skills, attitudes, and behavior in relation to becoming aware of, understanding, and relating to people who belong to different cultures or micro-cultures."

The method Casse recommends for "learning how to learn" in intercultural training programs is the workshop method. Each of the 17 workshops that Casse outlines here begins with a specific aim and specific objectives to be met with a process. The process in each case is a series of suggested exercises and inputs of concise conceptual and explanatory information. Lists of handouts and readings are included for each workshop. Some sample exercises give an idea of the range of the topics: exploring the different dimensions of culture shock, experiencing cross-cultural confrontation, using cross-cultural adjustment as an opportunity for personal growth, assessing the usefulness of cross-cultural training programs.

Casse's five-part formula for training the cross-cultural mind is the organizing principle of the book and of the process for each exercise: *discovering* intercultural realities; *inventing* — learning how to cope; *producing* practical guidelines; *conceptualizing* basic components and principles; and *evaluating* the effectiveness of training and learning. He draws his process from the double-loop learning method of C. Argyris and the total experiential learning concepts of Carl Rogers.

The emphasis of the book is highly positive, and the flavor of the book is practical, related

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to actual human needs and experience involving survival, meaning, communication, culture shock, empathy, negotiation, and training. Conceptually, it relates to the major scholarly contributions in philosophy, psychology, education, anthropology, sociology, and business. The reading lists are a well-blended resource, inviting and intriguing the reader toward further study. The text is enhanced with a wide variety of quotations, most of these from Western literature. Missing, except for a few random quotes from the *I Ching,* are insights from Eastern philosophy. This omission is natural, as systematic analysis itself is a Western idea and a product of recent industrial management studies.

The text does reach toward holistic thinking with references such as "A Gestalt Orientation to International Understanding." This is frequently the point at which Eastern thought begins. It would be intriguing to see this work interpreted into other languages and cultural frames of reference. The allusions to Jung then might come out as "Confucius say . . . ." Essentially, this is what should flow from Casse's work. There may be a million individual programs created by people who discover, invent, produce their own material, conceptualize it in terms of their own relevant experience, and evaluate it in terms of their own cultural and societal goals.

The book is spiral bound and utilitarian. People will undoubtedly tear out pages and make copies of exercises for their own groups. The illustrations are most helpful. Near-abstract photographs set the mood for each section, and well-chosen diagrams and illustrations help one visualize the concepts.

Throughout the book the wit and enthusiasm that Casse brings to his World Bank programs and numerous other appearances enliven the topic and prevent its settling into a pedagogic tedium. The book will certainly prove a valuable resource for the many who are now beginning to bring cross-cultural insights to their own work. Casse's systematic approach to the subject makes for easy comprehension. The simplicity of language without sacrifice of meaning will no doubt be appreciated by readers for whom English is a second language.

In his preface, Casse gives credit to a great many others who have contributed to his own thinking and the ideas used in the book. It is essentially a Casse *tour de force,* however, and greatly to his credit that he has been able to synthesize the essence of each contribution and recombine it so skillfully into such a useful handbook.

Available for $12.50 from SIETAR, 1414 22nd Street, N.W., Washington, D.C. 20037, U.S.A.

Reviewed by Wilbur T. Blume, a consultant in international communication in Washington, D.C.

3

One of the Clearinghouse's major functions is to alert its network members to resource materials that will help them get access to information for planning and implementing development activities. The materials reviewed below are recent publications that have compiled and organized, with varying degrees of success, information on resources in communication planning, distance education, funding assistance for broadcasters, international development, appropriate technology, and international population activities.

- ***Communication Planning at the Institutional Level: A Selected Annotated Bibliography,*** by Ronny Adhikarya and John Middleton (Honolulu: East-West Communication Institute, 1979), 99 pp.

The authors have selected for inclusion in this bibliography materials related to "the deliberate and systematic effort to organize and coordinate communication activities to support or meet the goals of a particular organization . . . and/or to support or meet the goals of a particular program . . . ."

The bibliography classifies publications according to a number of categories useful to the planning process: policy making, planning and strategy development, implementation, training, and evaluation. The index includes a special section on the communications planning process. An appendix lists journals and periodicals that were consulted during the literature search. A difficulty inherent in many bibliographies, and not resolved here, is the lack of information for obtaining the materials cited. In the absence of a large well-stocked library, most users in other countries will have to rely entirely on the annotation for their information.

Available for $6.00 from the East-West Communication Institute, 1777 East-West Road, Honolulu, Hawaii 96848, U.S.A.

- ***Distance Education: Selected Titles*** (The Hague: Bernard van Leer Foundation, 1979), 291 pp.

In this resource volume the Bernard van Leer Foundation has done a creditable job of resolving the problem of access to materials. In a lengthy appendix they provide thoughtful suggestions for finding publications by discussing microfilm and microfiche resources and how to use the Educational Resources Information Center (ERIC) data base, and by listing the world repositories of complete ERIC microfiche collections. They also describe other data bases and how to access them, and how to tap the resources of the United Nations family of organizations. Although this is a straightforward, unannotated listing of materials related to distance education, the subject index divides the 1,866 entries into country references and into many useful subject areas such as educational radio, telephone instruction, and correspondence courses. One appendix provides addresses for further information.

Available from the Bernard van Leer Foundation, P.O. Box 85905, 2508 CP The Hague, Netherlands.

- ***Source Directory: Assistance to Third World Broadcasters,*** prepared by Miriam Williford (New York: Ford Foundation/ British Broadcasting Corp., 1979), 78 entries.

This publication identifies donors and types of aid to broadcasters in the developing world, with no claim to exhaustiveness. The directory organizes financial and technical assistance entries by world region, with a separate section devoted to the United Nations. A typical entry identifies an organization's relationship to Third World broadcasting, its resources and services, key personnel to contact, the source of funding, and future program directions. A looseleaf binder format leads one to hope for an ongoing service.

Available for $5.95 (prepaid) from The Ford Foundation, P.O. Box 559, Naugatuck, Connecticut 06770, U.S.A.

- ***Acronyms Relating to International Development,*** compiled by Margaret Carroll (Ottawa: International Development Research Center, 1980), 162 pp.

The International Development Research Centre, recognizing the ever-expanding world-wide use of acronyms, comes to the aid of those who find themselves confused as to whether CIMMYT is the rice or corn research center, or whether it is the IIEP or IBE that is in Geneva. Unfortunately, this guide to acronyms is an enormously useful idea that has been only partially realized. The logical next step after spelling out the acronym and giving the organization's city and country location would be to provide an additional line of address so that one can contact the organization. With this addition, the next edition should be perfect!

Available for $9.00 within the U.S. from Unipub, Box 433, Murray Hill Station, New York, N.Y. 10016. Others may order from the Communication Division, IDRC, Box 8500, Ottawa, Canada K1G 3H9.

- ***Directory of Development Resources,*** edited by Robert E. Gaul and Helen A. Wilson (Washington, D.C.: Agency for International Development, 1979), 166 entries.

Published by AID's Office of Development Information and Utilization, this directory of development resources lists data banks, clearinghouses, newsletters and journals, and technical support capabilities. Most of the organizations listed receive AID funding to provide these services. Readers are directed to other information services provided by AID to development professionals. A separate listing includes academic and research institutions and

organizations outside of the U.S. that have a development focus. Institutions of agricultural research, both in the U.S. and abroad, are particularly well represented. The directory is well organized and easy to use.

Available in English, French, and Spanish from DS/DIU Resource Utilization Division, Agency for International Development (AID), Washington, D.C. 20523, U.S.A.

- ***International Directory of Appropriate Technology Resources,*** compiled by Brij Mathur (Mt. Ranier, Md.: Volunteers in Technical Assistance, 1979), 250 entries.

Documentalist Brij Mathur understands full well the need for clear, useful information and has organized this directory of 250 appropriate technology organizations to provide maximum assistance to the user. The directory provides information on each organization's type, activities, and functions related to appropriate technology, library and inquiry services, and publications. One section of the directory provides information on the organizations alphabetically by country. Another large section lists sources for publications, reports, and papers, including prices. A subject index provides access to information in both sections.

VITA has also published a useful regional ***Directory of Development Resources: Africa,*** compiled by Dennis Culkin. Organized in the same fashion as the appropriate technology directory, this directory of 187 entries covers a wide range of development activities. It lists institutions in such areas as housing, vocational training, social services, and cottage industry resources. The entry for Botswana's Brigades Development Centre, for example, reveals that it is government supported and that its objectives are training for primary school leavers, creation of rural employment, and promotion of small rural enterprises. Its services include management and technical assistance, marketing studies, extension services, responses to written inquiries, and a monthly newsletter.

Each of the above documents is available for $19.95 (postage extra), from VITA, 3706 Rhode Island Avenue, Mt. Ranier, Maryland 20822, U.S.A.

- ***Guide to Sources of International Population Assistance 1979*** (New York: UNFPA, 1979), 413 pp.

Not restricted to agencies and organizations solely concerned with population activities, this guide gives a lengthy narrative description of many of the UN family members (including their regional addresses), regional organizations and agencies such as the Asian and Pacific Development Administration Centre, bilateral agencies such as the Norwegian Agency for International Development, non-governmental organizations, university and research centers, and training organizations (many of the latter more specifically population oriented). In addition to general information about an organization, each entry indicates organizational support activities, channels of assistance, and directions for applying for assistance. This kind of comprehensive information is difficult to find, so both the compilers of the information and those organizations that responded so generously to the compilers' requests for information are to be commended.

A companion volume to the Guide is the sixth edition of UNFPA's ***Inventory of Population Projects in Developing Countries Around the World 1978-79.*** (New York: UNFPA, 1980, 605 pages). One portion of the inventory consists of a country-by-country identification of each government's position on and multilateral, bilateral, and non-governmental assistance to population and family health projects, as well as brief demographic facts. A second section is divided into regional, interregional, and global project listings. A source section covers organizations' publications, and lists organizations to write to for additional information. An alphabetical index completes the volume. Much information can be gleaned by a careful reading of this reference document — budget information, research and training resources, policy priorities, new program approaches, and sources of assistance.

Development professionals may contact UNFPA for information about the availability of these two volumes: United Nations Fund for Population Activities, 485 Lexington Avenue, New York, N.Y. 10017, U.S.A. ■

Reviews by Judy Brace.

Articles to Note

"Communication: A Vehicle for Development," by Jane Bunnag, in *Populi,* Volume 7, Number 2, 1980.

Bunnag effectively critiques the models on which most development communication programs have been based, basically the Western mass media model. Even where interpersonal communicators have been called on to play a larger role, they have too often been programmed along traditional mass communication lines, to provide information rather than to educate, failing to enlist the participation of the community. Bunnag sees traditional development communication research models as fundamentally flawed: the problem for study has usually been defined as *"how* do we *communicate* this innovation so that this audience adopts it," rather than an unstructured probing of the needs, perceptions, and larger communication context of the audience. Bunnag also calls research methodologies to task for distorting the data collection process by trying to distill complex varieties of meaning into quantifiable variables. She proposes the development of new models of communication research that would rely much more heavily on contextual research of an anthropological nature, incorporating traditional survey approaches only in areas that are quantifiable. The focus of the new model would be to engage "audience participation" in the development process.

"Education Sector Policy Paper," a review by James Potts, in *Educational Broadcasting International,* September 1980.

Potts takes on this review of The World Bank's sector policy paper on education, issued in April 1980, with the justification that the paper "is likely to prove the single most important book published this decade in terms of influence on educational policy, finance, and development." Potts notes that, although the comments in the text regarding the Bank's history in educational broadcasting are "a bit thin," a careful reading reveals "a strong commitment to the continuing use of the media." The paper reveals a fortunate emphasis on educational efficiency (". . . the Bank will support projects involving curriculum development, preparation of instructional materials, the training of teachers, and the use of mass media and distance learning techniques"), management, training, and software development. It also reaffirms a concentration on assistance to education for the poor and for women. Given the effects of inflation, the Bank indicates some willingness to use qualified local consultants rather than more expensive foreign experts in certain situations, and to cover incremental operating costs in funding arrangements. Potts notes that the paper reflects a tempered enthusiasm for non-formal education and some ambivalence about educational television; he attributes the latter to "the bias of economists."

"Broadcasting Development and Research in Tanzania," by G. O. Coldevin, in *Journal of Educational Television,* Volume V, Number 3, Autumn 1979.

Coldevin has written a refreshingly readable history of broadcasting in Tanzania from independence in 1961 through mid-1978. He describes briefly the limited television broadcasting experience on Zanzibar and Pemba (islands off of the Tanzanian coast), which consisted of two and one-half hours of broadcasting daily at the time of his study. The bulk of the article concentrates on the five mass mobilization radio campaigns that took place between 1969 and 1975, and on the use of radio to support the ongoing national literacy project. Acknowledging some of the problems connected with the mass mobilization campaigns — scheduling conflicts, inadequate distribution of print materials, overcrowding in study groups, insufficient training of group leaders, too much time between campaigns, too little attention to evaluation — Coldevin nonetheless finds the Tanzanian experience with radio impressive. ■

Communications and the Status of Women

Has the status of women improved measurably since the Mexico City conference that initiated the United Nations Decade for Women (1976-1985)? At that 1975 conference, a plan of action was devised around the triple objectives of equality, development, and peace. In July 1980, mid-Decade, a world conference was held in Copenhagen to consider progress toward the goals set in Mexico City and to set priorities for the second half of the Decade around the sub-themes of employment, health, and education.

According to the provisional text of the final report of the Copenhagen conference, "the review and appraisal of progress achieved during the past five years indicates that in many countries the situation of women from the so-called 'backward' sectors has worsened, . . . in particular . . . with respect to the conditions of employment and education for women in the rural and the so-called marginal urban sectors . . . . Illiteracy rates for the female population appear to have increased and are projected to increase for several countries . . . ." In many countries, "the wide gap between the economic opportunities available to men and those open to women has not been reduced in proportion to the increases achieved in overall economic growth."

To be sure, this lack of progress in the developing countries is not all for want of trying. The conference report emphasizes that "the current world economic crisis has contributed to the worsening situation of women in general . . . . In developing countries the negative impact on women is even greater than in developed countries, . . . and recent studies on the impact of international economic problems on the employment and working conditions of women show that in fact their adverse effects on the wage levels and job stability of women are more extensive than on those of men."

Thus, the situation in terms of equality for women is still well below the mark and not really improving. Women "represent 50 percent of the world adult population and one-third of the official labor force, they perform for nearly two-thirds of all working hours and receive only one-tenth of the world income and own less than 1 percent of world property."

Given these facts, renewed and even more intensive efforts to promote the status of women are needed worldwide. Communications can play an unquestionably important part in such efforts — but do they? Prior to and in preparation for the Copenhagen conference, the United Nations published two reports assessing the record of the media in portraying and involving women. The first of these, *The Portrayal and Participation of Women in the Media,* was prepared by Margaret Gallagher of Great Britain's Open University, and published by UNESCO (Division of Development of Communications Systems, Culture and Communication Sector, 7 place de Fontenoy, 75700 Paris, France).The second was the report of the U.N.'s special rapporteur, Esmeralda Arboleda Cuevas, on the influence of the mass communication media on attitudes toward the roles of women and men in present-day society (U.N. Document #E/CN.6/627, 10 January 1980).

A seminar was held at U.N. headquarters in May 1980 to discuss the findings of these reports. Participants agreed that, "in spite of the many recommendations and proposals concerning the image, access to, and participation of women in the media made since the International Women's Year in 1975, fundamental problems in this area persisted . . . ."

In July, a step toward strengthening international communication among and about women was taken at the Mid-Decade Forum, an independent activity that ran concurrently with the world conference in Copenhagen. The forum provided a less structured opportunity for non-governmental groups to exchange ideas. As part of the forum, Women's International Network News *(WIN News)* coordinated three panel discussions on "Women's News Media around the World," with more than a dozen women editors and publishers sharing their experiences. The broad purpose was to encourage more women to start publications that support communication among women about their own concerns and that report on women's issues treated inadequately by the international press and by traditional women's journals.

In addition to the individual reports by panel participants that are summarized below, the panelists formulated a joint statement to be sent to the U.N. Conference Secretariat, indicating that "publishers of national women's media with international links share the same problems around the world," and that the meetings had therefore established that "an annual (or biannual) meeting of women publishers/editors should be organized with United Nations support to gain international funding. The objective is to strengthen international communication between women and change women's image around the world." The statement was not published in *Forum '80,* the conference newspaper, so it did not get the broad degree of support that it might otherwise have received.

The following comments summarize the discussions and presentations of the women editors and publishers from the developing world who served as panelists for the sessions:

- Kate Abbam, Editor/Publisher, *Obaa Sima,* Ghana: *Obaa Sima* ("Ideal Woman") has been publishing since 1971. The main purpose of the journal is to give the women of Ghana a voice and to speak out for them. Regular features include a page by a doctor dealing with medical matters. A nurse provides everyday advice on selected subjects, and the family and children's articles are designed to educate. *Obaa Sima* and Kate Abbam's work have earned international recognition. Her publication is urgently seeking financial support, as the general economic downtrend in Ghana has made publishing increasingly difficult and expensive. (*Obaa Sima,* P.O. Box 5737, Accra North, Ghana)
- Jyotsna Tribhuwan, Publisher and Editor, *Women's Forum,* India: The *Women's Forum* has been published for a number of years by Jyotsna Tribhuwan, a lawyer, who, according to her statement, "became convinced due to my legal practice that women need better communication among each other to jointly press their own concerns." The *Women's Forum* is thus concerned with legislation for women in India and lobbies with government bodies. It is also concerned with international matters, establishing communication with U.N. activities and bodies, actively supporting the U.N. World Plan of Action, and reporting regularly on U.N. activities. (*Women's Forum,* Ahmednagar, India)
- Madhu Kishwar, Editor, *Manushi,* India: "We started out with no experience. . . . Several women got together in April 1979 and drafted a proposal to publish a women's magazine. The first issue had a very enthusiastic response. We survived by individual subscriptions and donations, and we managed to collect a little bit of money before we started. We do not accept any large grants because this would make us dependent. We do not accept any sexist advertising. We mainly use personal contacts to get the money for printing. We now publish 10,000 copies (our first edition was 2,000), distributed entirely by women. We get many letters from women all over India; we encourage them to translate into local languages and make regional editions." (*Manushi,* C1/202 Lajpat, Nagar 1, New Delhi 110024, India)
- Patricia Lone, Associate Editor, *Viva Magazine,* Kenya: *Viva* is a glossy women's magazine that, according to Patricia Lone, has to survive by catering to advertisers and including columns on women's fashions and other traditional women's concerns. *Viva* has been able to develop an excellent staff of African women reporters and writers who have published many in-depth articles on some of the social problems facing women in the developing Kenyan society.

As Patricia Lone admitted, due to the fact that up to 80 percent of Kenyan women are illiterate, the magazine reaches only women in the modern sector, in government, and those who in many ways are highly privileged, including women decision makers. In-depth discussions of women's legal rights, women's access to jobs and education, and women's participation in government and decision making have characterized the contributions of this publication. *(Viva Magazine, Box 46319, Nairobi, Kenya)*

Panelists from the developed world included:

- Katie Breen, Editor, *Marie Claire,* 11 Bis rue Boissy d'Anglais, 75008 Paris, France
- Daniela Colombo, *Effe,* P. Campo Marzio, 00186, Rome, Italy
- Ikuko Atsumi, *The Feminist Japan,* 6-5-8 Todoroki, Setagaya-ku, Tokyo, Japan
- Fran Hosken, Editor, *WIN News,* U.S.A.: In its column on "Women and Media," *WIN News* reports regularly on publications by and for women. It also exchanges publications and information with the women's press in all parts of the world, providing reviews and content summaries of dozens of publications.

The sum of the experience of the editors and publishers shows that it is possible to publish and learn while you go if you are willing to contribute your own time. However, most women's publications are constantly beset by financial problems and exist only on the commitment of their staff. Therefore, it is especially important to organize internationally with a view to establishing international support, including international funding, and to launch more women's publications in countries that do not have any as yet.

The worldwide media column of *WIN News* will serve as an ongoing communication link between editors and publishers. All of those interested in participating in this action to create support for ongoing exchange, cooperation, and meetings between women editors and publishers are invited to write to Fran Hosken, Editor *WIN News,* 187 Grant Street, Lexington, Massachusetts 02173, U.S.A. ■

Information used in this article was contributed by Fran Hosken of *WIN News.*

Development Communication Report, published quarterly by the Clearinghouse on Development Communication, is distributed free to over 8,000 development professionals.

A center for materials and information on important applications of communication technology to development problems, the Clearinghouse is operated by the Academy for Educational Development, a nonprofit planning organization, and supported by the Development Support Bureau of the U.S. Agency for International Development as part of its program in educational technology and development communication.

Readers are invited to submit typed manuscripts of no more than 1000 words and to send in photographs.

On File at ERIC

The papers reviewed in this column are available in microfiche or paper copy, as indicated, from the ERIC Document Reproduction Service (EDRS), P.O. Box 190, Arlington, Virginia 22210, U.S.A. Please order by ED number and enclose payment for the price shown plus shipping.

- Colle, Royal D. ***Developing Health Education Programs in Rural Areas.*** Paper prepared for the Second International Congress of the World Federation of Public Health Associations and the 69th Annual Conference of the Canadian Public Health Association. Halifax, Nova Scotia, Canada, May 1978, 25 pp. (ED 182 082)

If primary care is to be provided to remote rural populations in developing countries, alternative and innovative delivery systems emphasizing community participation, use of paraprofessionals, and health education programs must be considered. A 1977 American Public Health Association study of 180 health projects in developing countries reveals that 92 percent of the projects are offering some sort of health education service, indicating the serious emphasis placed on the health education component. Methods being utilized to make health education a more effective part of the primary health system include radio campaigns in Tanzania and in Assam, India, and audiocassette programs for both group and individual listening in Guatemala and India.

Cassette communication, a simple, low cost, portable, durable, flexible, and accurate means of delivering instruction, is being used for paraprofessional in-service training in Colombia, and a Guatemalan project uses cassette and record/playback systems to assist student doctors in expanding the quality and quantity of their contacts with rural people. These programs have substantial potential, but unless there is strong political commitment to the systematic use of communication and administrative record keeping, it will be difficult to implement and assess innovative health education strategies. Available from EDRS in microfiche for 83¢ or in paper copy for $1.82 plus shipping.

- Vella, Jane Kathryn. ***Visual Aids for Nonformal Education: A Field Guide to the Production and Use of Inexpensive Visual Aids in Nonformal Education.*** Amherst, Massachusetts: University of Massachusetts, Center for International Education, 1979, 47 pp. (ED 183 214)

The effectiveness of visual aids in nonformal education depends on their relevance to the audience with which they are used, and this guide provides a discussion of various factors fieldworkers should consider when designing and using simple visual aids in developing countries. Four specific types of visual aids are discussed in some detail – found objects, charts, pictures, and models – and suggestions are offered for producing these four prototypes. Uses for such inexpensive materials as newsprint, masking tape, and felt pens are indicated, and four books providing additional information on the design and production of visual aids are listed. Available from EDRS in microfiche for 83¢ plus postage.

- Fuglesang, Andreas, ed. ***The Story of a Seminar in Applied Communication. The Dag Hammarskjold Seminar on "Communication – An Essential Component in Development Work".*** Uppsala, Sweden: Dag Hammarskjold Foundation, 1973, 141 pp. (ED 180 735)

The objective of this two-week seminar in 1972 was to break away from traditional and theoretical concepts of information work in order to gain a practical insight into communication, especially as it applies to social and economic development. Fifty participants and lecturers from developed and developing countries in Europe and Africa focused on applied communications, management, sensitivity training, the function of work models, and group dynamics in a series of reports, lectures, discussions, and experiments.

Reports on communications programs in each represented country were followed by talks on specific issues, including transition and social change in rural and industrialized societies, the function of communication in the change process, the crucial management problem of internal communications, radio communications, and models as applicable tools. The seminar concluded with presentations on total communications campaigns in the fields of nutrition, family planning, and traffic, and a participant evaluation of the program. Some articles in the report are adaptations of the seminar lectures. Available from EDRS in microfiche for 83¢ or in paper copy for $9.32 plus shipping. ■

Barbara B. Minor, Publications Coordinator, ERIC Clearinghouse on Information Resources, School of Education, Syracuse University, Syracuse, New York 13210, U.S.A.

Letter to the Editor:

I have read with interest "Is Literacy the Only Road to Learning? Basic Education by Radio Is an Alternative," by Dwight W. Allen and Stephen Anzalone (*DCR* 30). Some of us here in India have been working on the same question, from a different perspective.

We agree with the basic argument suggested in the article that the initial point in nonformal education need not be literacy. The question that we have been asking is whether literacy is the only way to orient those who are deeply immersed in the various processes of oral culture to the processes of modernization

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reliant on the print media. We have also been asking whether there is an immediate need for literacy in cultures that still conduct most of their transactions through face-to-face individual or group communication.

An assumption underlying such questions seems to suggest that the life patterns and communication needs of these communities do not have any unavoidable uses of the print media. . . . The predominance of oral culture in traditional societies does in fact give rise to a genuine skepticism as to the need for literacy or even written culture. The various transactions in life have long been conducted without any written document, and newer modes of conducting transactions need not always be preceded by control over literacy skills; other media can be used to strengthen and expand oral interaction.

What has bothered us in this stipulation, however, is the question of the attitudes that learners bring to the very process of education and the manner in which they perceive its various instrumentalities. One might say that the learners go largely by stereotypes formed on the basis of their attitudes. They have one set of responses to a setting that has a teacher, a classroom, a textbook, a group of students, and other learning aids. Thus, within the nonformal framework of education, they expect a certain kind of formalism. This attitude is based partly on their pride at being participants in the learning process and partly on a desire to advance like the others (their more well-off compatriots).

Learners have another set of expectations for the radio (or television). This medium has been to them a kind of entertainment that carries an appeal wider than that carried by artists in their own area or within their experience. Their response to this prepackaged entertainment is deceptively simple and exclusive. The film songs, story sequences, and actors' voices, reinforced by the learners' occasional exposure to cinema/television, generates in them a situation-specific response to the radio.

One can theoretically argue that the content and techniques in radio programs can be imaginatively arranged, that it may be possible to mix education with entertainment. There is a great deal of validity in this kind of exercise. However, as indicated earlier, the adult learner's response is in terms of stereotypes; different media of education are responded to differently. There is one response to the teacher, another to the elder or temple priest, and yet another to the faceless "speaking" box.

I am not suggesting that no education takes place through radio. The authors have cited experiments in several countries where the process of education has been successfully initiated through radio. I feel, however, that the number of persons so "educated" would not differ substantially from the number made literate through adult education centers. Nor would the cost be significantly different.

Let us not forget that the message conveyed through this channel of transmission is unlikely to match the immense variations observed in the characteristics of the adult learner population: age, sex, income, caste, religion, motivation, attitude to learning, etc. Let us also not forget that radio is essentially a part of the written culture, even though its medium is oral. Most radio programs are pre-written, duly edited, and rehearsed; they seem to have all of the attributes of any pre-packaged message. It would be difficult to claim that radio programs have the attributes so vividly observed in face-to-face communication . . . .

It seems to me that nonformal education with literacy as one of its several elements is going to require a multimedia approach, both oral and visual. It needs to take into consideration the very effective role being played by folk arts. Andreas Fuglesang suggests that "in the oral culture the legends, the myths, the epic poems, and the proverbs are mechanisms for information storage. The fable is a memory device. Society's future depends on the good function of the memory of the elders. The word is a thing. You have it when you say it."

It is difficult to know whether the "word" retains the same communicational vitality and essential ring of sincerity once it is transmitted through a faceless channel. ■

S. C. Bhatia, Coordinator of the Delhi University Adult Education and Continuing Education Cell.

The Authors Reply:

We appreciate Dr. Bhatia's response to our article and the points he raises.

Our purpose in the article was to encourage greater consideration of the possibilities offered by radio for basic education for adults. We believe that radio has the potential to play an important, constructive role in adult education. Whether that potential is realized in practice is a different question and one that must take into account the points Dr. Bhatia mentions.

We agree that attitudes are fundamental in any systematic use of mass communications for education. But here we believe that different attitudes toward media and toward a teacher are not necessarily prejudicial to the instructional effectiveness of the former. In the United States, for example, children's expectations from and responses to television programs are far different than those from and to a teacher in a classroom. The number of children learning to read as a result of the television series *Sesame Street* proves that entertainment expectations need not detract from learning.

Our urging of more consideration for an educational role for radio does not mean that we would wish to do away with other adult education activities any more than we would want *Sesame Street*-type programs to replace schools. We are not championing radio as a quick technological fix or panacea. We *do* believe that basic education by radio, if well designed and used in appropriate situations can have much to offer in a strategy for adult education.

We were delighted to hear of Dr. Bhatia's efforts in conducting nonformal education without literacy as a starting point. Although such an appreciation led us to recommend a greater role for radio, it can lead to other possibilities as well. The direction Dr. Bhatia and his colleagues are following seems to us to be most worthwhile. ■

Dwight W. Allen and Stephen Anzalone

Nutrition Communication Project

Current data collected by the World Health Organization, UNICEF, and others links increased incidence of infant mortality to early weaning and a trend away from breastfeeding. Low-income mothers in developing countries, lacking the knowledge, purchasing power, and sanitary facilities to use and prepare infant formula and other breast-milk substitutes adequately, need nutrition education to teach them the full range of infant feeding skills. One project created to help meet this need is the International Nutrition Communication Project.

This four-year project, financed by the Agency for International Development and coordinated by the Education Development Center (EDC), provides technical assistance in using educational resources to improve the nutritional status and well-being of low-income families. Project staff and consultants help host country planners identify nutrition education needs, resources, and target groups; develop appropriate communication strategies; and evaluate the impact of nutrition education programs. In addition to its concern with activities to improve infant feeding and weaning practices, the project seeks to have an impact on a wide range of social and cultural factors that influence dietary behaviors susceptible to change.

A nutrition education clearinghouse has been established at EDC to collect and disseminate outstanding messages and materials to nutrition education fieldworkers and program coordinators. The project will publish an Annotated Directory of Nutrition Education Projects and a Case Study Manual of selected nutrition education interventions, both to be updated annually.

For information contact Ronald Israel, Project Manager, International Nutrition Communication Project, Education Development Center, 55 Chapel Street, Newton, Massachusetts 02160, U.S.A. ■

Two-way Radio

(Continued from page 3)

successful operation of a two-way radio system. Some systems have only enough funds to acquire the original equipment, thus when spares are required, they may be difficult to obtain, or the government may have insufficient foreign exchange to buy them.

Power supplies are a persistent technical problem. In locations with an existing power source (perhaps a town power supply or a generator for a hospital), voltage regulators may be needed to prevent damage from power surges. If voltage is much below specified output, it may not be possible to use local power to run the radio or recharge its batteries.

A common self-contained power source for two-way radios is a standard 12 volt DC automobile storage battery, recharged by a small diesel generator that must be properly cleaned and maintained. The cost and logistics of transporting diesel oil to remote locations – often it must be flown in – can make this one of the highest costs of operating a radio system. In contrast, solar panels can serve as the recharging source and can eliminate the need for generators and fuel. Although at present their capital cost is higher, they are becoming less expensive, and they require little maintenance until replacement is necessary. Field tests do not indicate any major problems with solar panels, but none have been in use long enough for definitive evaluation.

Another set of causes of system failure or abandonment relates to the perceived utility of the system. If it is to be valued and used by the rural health worker, the radio must be a respected and integral part of the health delivery system. Lack of support and continuity for field facilities will encourage health workers and patients to by-pass lower levels of care in favor of overcrowded hospitals, where all illnesses can be treated and referral is not necessary.

Conclusions

Several lessons can be drawn from the sum of experience with two-way radio systems:

- the equipment must be reliable and simple to use;
- system budgets must include adequate allocations for operations, maintenance, and spare parts;
- training operators in proper use of the radios and in preventive maintenance can extend the life of the system;
- regular operating schedules and procedures can increase the effectiveness of the system;
- educational programming requires good audio quality;
- educational applications require a greater investment in personnel time than do consultative and administrative applications.

As more experience is gained in using two-way radio as an integral part of rural health projects, it is probable that we will learn how to avoid the organizational problems now associated with such systems, and that the improved combination of health personnel and communication systems will permit even greater penetration of health care into rural areas. ■

This article is excerpted from a paper prepared by the authors for a seminar on "Two-way Communications for Rural Health Services in Developing Countries," held in June 1980 with the support of the National Academy of Sciences and USAID. Copies of that paper, "Two-Way Radio for Rural Health Care," are available from the Clearinghouse.

Douglas Goldschmidt, associate director of the Rural Satellite Program at the Academy for Educational Development, is working with MEDEX Guyana on the expansion of its two-way radio network.

Heather E. Hudson, director of telecommunications applications for AED, has been involved in planning and evaluating health communication projects in Alaska, northern Canada, Guyana, Lesotho, and Sudan.

Wilma Lynn, currently with the Population, Health, and Nutrition Division of The World Bank, recently conducted a study of two-way communication projects for AED.

East African Network

(Continued from page 4)

monthly average of 2,200 calls, 26 percent are in the medical category, 3 percent relate to drug supplies, 14 percent to flight coordination, 30 percent to routine matters, and 27 percent to administration.

Management and Evaluation

In 1979, a Radio Committee with membership from AMREF's Radio Room, Aviation, Medicine by Air, and Projects Divisions, chaired by the Medical Director, was established to coordinate the diverse operational aspects of the radio system and to discuss and decide upon changes and improvements. Standardized forms for recording calls at outstations were designed and sent to network participants, together with a questionnaire designed to solicit information for purposes of evaluating the radio system and its uses.

The current evaluation, begun in January 1980, is being conducted by an outside consultant engaged by AMREF to assess the effectiveness of its medical radio communication system and to consider its potential for replication. The preliminary results of this evaluation, to be available shortly, are likely to substantiate the widely shared opinion that the AMREF medical radio network is an enviable example of a well-run two-way communication system worthy of replication in other parts of the developing world. ■

Michael Gerber is executive director of the International Medical and Research Foundation (the U.S. affiliate of AMREF), 833 United Nations Plaza, New York, New York 10017, U.S.A.

Dilemma

(Continued from page 16)

not tend to bring out the best in people. Certainly all of us were involved in the project to pursue our own interests. The problem is that the collective effect of this self-aggrandizement and indulgence affected the project in profound ways, much to the detriment of those on the receiving end.

Even in the Indian villages, we discovered a labyrinth of political ties and conflicts that will, in the long run, require attention by those souls hardy (or foolhardy) enough to attempt to impose social change from the outside. The radio station was supposed to work closely with established health and nutrition leaders in these villages to support the educational content coming over the radio through informal conversations, group chats, and seminars. In the three villages selected for the baseline study, all of these leaders were connected through close kinship ties to the ruling village elites. Unfortunately, the women most lacking in basic health and nutrition information had only marginal interpersonal communication networks with the leaders and the ruling elites.

These same women often reported contact with local *curanderos* (traditional medical practitioners), whose remedies could be bought with payment in forms other than the money required to purchase the health leaders' imported medicines. Yet the entire project design, from the PVO through the coordinating committee to our own staff, chose to ignore the existence of the *curanderos* and the possible utility of traditional remedies.

With so many levels of competing and conflicting interests, it would seem that not much is left for the poorest of the Indian villagers to mold for themselves. What, really, can they control? Perhaps some of the rural people will offer or be requested to provide programming input, but veto power over what actually is aired rests with the radio staff, the committee, and the PVO.

Ultimately we will have to recognize that there must be real rewards for project recipients that will insure their participation, otherwise a project cannot really be "of the people." And if it is not, then we may in fact be faced with what Ivan Illich has termed "the modernization of poverty," where enterprising individuals progressively "develop" (or even create) needs of other people down the line for their own purposes.

The issue, it seems to me, is not *whether* self-interests will affect a project, but rather what they are, who their allies and enemies are, and how they interact. If we can recognize that self-interests are necessarily associated with any project, and that stronger programs can result if participants work in open knowledge of the reward expectations of every other person involved, then self-interest can be brought out into the open and made a constructive element in program design and implementation. ■

Gary Garriott is now a technical advisor with VITA.

Dilemmas in Country X: Candid Discussions about Failures

Development is a communication problem. People do things differently because they learn new ways, new techniques, and new technologies. Information flows best between people of equal and common interests . . . . The individual's self-interest provides the motivation for development. Communications must respond to that self-interest . . . .

William Ellis, in *TRANET*

These words condense much of the current thinking in development communication projects. A critical question is, where does self-interest fit into the development process? By the time a new project actually gets to the level of implementation, a great many self-interests have already pulled at its form and function, and will continue to do so. What then remains for the interests of the community and its people? What reward does the project have for those people whose participation is critical to project success?

I recently returned from a year in a developing country where I was assisting in hardware and software aspects of an educational radio station installation. The project was described as an effort to increase knowledge levels in health, nutrition, and agricultural information among the rural poor. Employed by a small Private Voluntary Organization (PVO), I was one of two outside coordinators on the project.

Although the stated objectives of the project certainly sounded worthwhile, my own participation was activated in large part by my desire for involvement in the planning and execution of a field study in network analysis. I was also looking for a short-term overseas cultural experience in a rural setting.

My co-coordinator was performing the field study to meet requirements for a Ph.D. degree, in exchange for administrative duties on the project. Both of us were interested in promoting as much local participation in programming and station operation as possible. The project itself, however, was a kind of experiment being imposed on the community, as the initiative for the project had come, not from the Indian population it was to serve, but from the PVO organization, which had competed successfully for donor agency money.

Proposed innovations abounded. On the technical side, our engineering consultant insisted on our raising an antenna of unproven design. Requests for a structural analysis went unheeded, and the first attempt to put it up was unsuccessful, with nearly fatal consequences. The second try was successful, but only after considerable local engineering and redesign. Why experiment full scale with an unproven technology? The rationale constantly repeated was replicability for future projects.

On the organizational front, an innovation required by my PVO was the establishment of a local coordinating committee made up of representatives from religious, educational, and community development organizations operating within the region. The committee was given responsibility for disbursement of about one-fifth of the total grant and was empowered to make local management decisions such as contracting for construction materials, hiring and firing personnel, etc. The requirement was wisely formulated: committee members collectively possessed the kind of local political leverage and savvy that meant operational tasks were performed quite well. However, since final veto power remained with the PVO, the committee had no voice over how the rest of the project's budget was to be spent, nor could it influence any substantial modifications in project policy.

Although there was some genuine concern by the committee for the well-being of the Indian people, committee members were also interested in the project for at least two selfish reasons. First, the majority of the members were aligned with the political machine then in power, and both party and personal benefits were to be gained through association with the project. Second, since most seats were held by civic and political powers aligned with the machine, other minority elements, including a vocal and politicized Indian group that was also represented, were effectively barred from introducing programming concepts that might challenge the status quo. For example, while it might have been true that lack of certain kinds of information contributed to the marginalization of the Indians, it was obvious that a systematic expropriation of Indian land and resources by the government and by wealthy individuals constituted the historical legacy of Indian impoverishment. Any suggested consideration of these issues was promptly branded "political" and disallowed.

Our staff — a director, two broadcasters, three secretaries, an office boy, an office girl, and a night watchman — were all quite straightforward about their seeking employment with the project solely for economic reasons. The director, an Indian by birth and no doubt genuinely concerned with the welfare of his own people, was nevertheless not very interested in continuing to live a life of rural poverty and was seeking a middle-class urban lifestyle with all its rewards. It was eventually discovered that he was falsifying receipts and embezzling government salary checks, and he was forced to leave the project.

Not that I blame him very much. Rising expectations, combined with high levels of anxiety and uncertainty about the future, do

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Development Communication Report

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Communication and Energy: Community Participation in Forestry Projects

by Marilyn W. Hoskins

In Africa, as in much of the developing world, wood is the major source of fuel for cooking and heating in the vast majority of homes, and the supply of wood is dwindling dramatically while demand is increasing. Example after example shows that the common top-down approach to forestry is not able to keep pace with the increasing demand for wood fuel. Not only is the demand too great and generalized for government agencies alone to fulfill, but successful efforts to produce local fuel in ways that protect or reconstitute a healthy environment require support from local people. This awareness, along with the new emphasis of many international donors on local participation in defining and solving local problems, has created a new interest in combining forestry technology with community development in a new field called "forestry for local community development," or FLCD. FLCD includes not only raising trees but processing and using tree products—in this case all of the processes from the seed to the cooked dinner.

The basis of FLCD is community participation. If residents do not participate in designing a project, it risks being inappropriate to address local needs; if they do not participate in implementation, the trees probably will not survive; if they do not participate in receiving benefits, the project is meaningless. The main problems in FLCD are how to insure local participation from the beginning to the end of the project and how to provide appropriate technical and managerial support to assure that programs will be successful and will benefit those who participate.

A typical problem that illustrates the need for local support of forestry projects is the control of bush or forest fires. During a one-week visit into the Casamance area of Senegal in early 1979, an FLCD team from the Food and Agriculture Organization of the United Nations (FAO) observed fires in four different national reserves. In only one case were neighboring people helping to control the fire; they were paid workers from an endangered forestry nursery fighting the fire under the direction of their forestry supervisors. One of the fires had obviously spread from a nearby village. Because there is a local law that requires villagers to help fight a fire spreading from their village, the angered foresters talked of enforcing a "work day" for all of the male villagers as their punishment for not helping. Meanwhile, the women of the village continued washing their clothing, and the men stood by repairing farm tools and chatting among themselves as the foresters battled the blaze.

The region in which all four fires took place had been the target area of an intensive foreign assistance program on community involvement in fighting fires: many residents had seen films, schoolchildren had heard lec-

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In this issue . . .

Radio Reaches Rural Teachers in Nepal—but Do They Have the Energy to Turn It On?

Radios are found almost everywhere in the developing world and are thus invaluable for delivering educational messages of all kinds to the most distant corners. Radios also require high-quality electrical energy to power them. Although much of the world's population can get electricity through the distribution system of electrical power plants, much of the rural population in developing countries lives beyond the power lines and must depend on other forms of electrical supply for their radios, forms such as batteries and solar cells. An educational project in Nepal recently gave some attention to solar cells as an alternative to the more common dry cell battery for use in radios. The results will be helpful to many who are considering the use of solar power in similar projects.

The Nepal project is essentially a distance teaching project. In 1971, the government of Nepal adopted a National Education System Plan, one goal of which was free and compulsory education in grades one, two, and three. The shortage of trained primary teachers has made this a difficult goal to attain. By 1977 there were over 9,000 primary schools with a combined enrollment of 769,049 students—69 percent of Nepal's primary school-age children. Unfortunately, many of the teachers in those schools are untrained or undertrained. With less than a tenth-grade education, many are unable to meet certification standards.

Having identified the upgrading of primary education as one of its greatest needs, the government of Nepal had to find ways to train its teachers. The country's mountainous terrain and lack of roads make it difficult for rural teachers to travel to residential teacher training centers, and even if they did, the number of higher-level teachers who could provide teacher training instruction is limited. The solution to this dilemma seemed to

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tures and drawn posters, and a number of villages had been given back-tanks for fighting fires. However, as anyone who has fought a bush fire can testify, fire fighting is a hot, dirty, uncomfortable business, and residents are not likely to get involved voluntarily unless they can clearly see that they have something personal at stake. The four fires in question were in what residents considered "foresters' lands," clearly not their own domain or responsibility.

If African nations are to solve their energy problems, then they will have to find alternatives to top-down projects. Local energy problems cannot be isolated from localized basic needs and priorities; successful projects require local input into their planning, and broad local support for their duration. Fuelwood production, transformation, and efficient utilization need to be guided by the bottom-up or FLCD philosophy.

Participation and Fuelwood Production

The decision to include local people in the design, implementation, and benefit-sharing aspects of fuelwood production projects raises a number of issues that have not been considered important in traditional industrial forestry. It calls for reorienting goals and expectations; redesigning training, technical packages, and managerial support; and a new type of commitment on the part of donors, technical support agents, and local residents.

Unfortunately, there is a lack of experience in FLCD on the part of both host country foresters and expatriate forestry advisers. Other than some community ownership of local woodlands in Switzerland, Austria, and the Scandinavian countries, there is little European or American experience with locally planned, locally implemented, and locally managed forests. (This might explain why the Swedes and Swiss are in the forefront of many FLCD efforts.)

A demanding and rigorous education in forestry has given many upper-level European and African foresters a sense of elitism. Their training stresses rule enforcement and includes military training, but seldom includes courses in sociology, community development, or extension methods. Rural Africans may have more contact with foresters than with most other government officials, but these foresters are usually in uniform, often armed, and frequently feared.

It is not surprising, therefore, that early attempts at community forestry have suffered from a lack of clarity regarding the philosophy of FLCD, a lack of effective techniques for carrying it out, and a difficulty in communication creating frustrations for the various actors involved. There is a need, it seems, to underscore what the FLCD approach offers to each of the three participating groups—community residents, foresters, and donors—and what they must contribute in return. There is also a need to examine ways in which these rewards and responsibilities can be made clear from the beginning of a project.

Community Needs and Responsibilities

If community residents agree to participate in an FLCD program, they have the right to help design a program that complements their other essential activities. Once they have learned about required inputs, risks, and potential benefits, they can select the best options, to be implemented with appropriate technical and managerial support. They also have the right to receive benefits they value in return for their work.

The subject of benefits and incentives is probably the most difficult to address, but it is at the heart of motivating participation. In places where wood is still available as a "free good," it is almost impossible to interest villagers in projects that are strictly firewood oriented. Other desirable program options, such as including various species valued in the community (fruit- or income-producing trees) along with trees that supply fuelwood, will be needed to attract participation.

Even in communities where fuelwood is a problem, it is never the only need. Forestry programs will interest participants only insofar as they also address other perceived needs —improved crop production, added food or forage, a source of income, environmental improvement. Programs must be tailored to the appropriate people, depending on local interests, property ownership, land availability, social structure, and work patterns. In any type of program, the potential benefits and their eventual distribution should be clearly understood before work begins.

In many countries there are individual or village requests for more seedlings and technical support than the forestry service can currently provide. However, in other areas, the forest service or donors see the need for forestry projects but local residents do not. For example, foresters may wish to start programs for erosion control to benefit distant areas, or for fuelwood for urban centers or future use. If the project cannot be designed so that local residents see benefits they value coming to them, they will need other incentives. One experienced project designer reports that in harsh environments requiring lengthy growing periods for trees, residents will opt for other uses of time and land unless they are paid for planting trees. However, payment for planting trees may have negative results: participants paid to plant trees may assume that the project manager or government owns the tree, and will fail to maintain it; or, after hearing of a project paying participants in a neighboring village, residents may refuse to participate in their own community project unless they are also paid.

In Senegal, one project paid farmers a small amount each year for three years for each living tree. They found that the survival rate was almost 100 percent, compared to about 20 percent in another project in which they paid farmers only to plant the trees. In India, a forestry project gave land to unemployed and landless people and paid them to plant trees. Every year the project gave each person who had maintained his trees more land to plant. When the trees were grown the participants received a percentage of the harvest and retained the land.

Several countries have volunteer programs, especially for consciousness raising, that work with varying degrees of success. In Dakar, Senegal, during the Day of the Woman, women planted trees around a new social center. In the Gambia, trees were planted along the roads during a tree planting day. As frequently happens, trees near the houses were cared for and lived, the others died. In Kenya there is a program in which city dwellers pay for a tree to be planted in a village and hire a handicapped person to care for it. In Senegal, Boy Scouts and some school groups help with forestry projects every summer. Some countries such as Tanzania have minimum community participation requirements that may be applied to forestry programs. Efforts to publicize such projects help to educate the populace to the importance of trees and the environment. However, volunteer programs are only as good as the technical and management supports permit. Results can only be disheartening unless they are planned and organized with care and receive appropriate follow-through to ensure their success.

When community members participate in FLCD programs, they need to consider not only the benefits and supports due to them, but their own responsibilities in making the project successful. Necessary inputs required of the participants for both beginning and maintaining the project should be clear and agreed to before the project begins.

Technical Support Personnel

Foresters and extension agents also have rights and obligations in FLCD projects. They need to find FLCD work successful and rewarding, and they have the right to have their position and responsibilities clear and realistic. They should not be left with a program for which there is not adequate personnel, material, or logistic support. A liberal amount, perhaps 20 percent of each project budget, should be dedicated to education, personnel and development of appropriate materials. Donors should work with national level services to improve communication and

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Assessing Community Energy Needs: Data Gathering and Dialogue

by Mary Elmendorf

In any given society there are unknown or poorly understood sociocultural factors that have a direct bearing on the ways in which planning and policy determinations can be designed and implemented. Horror stories abound with respect to large and small development projects that have failed because some apparently insignificant cultural factor was either unrecognized or ignored. It is, in fact, rarely possible to design projects or to arrive at useful policy guidelines affecting the daily lives of people in traditional societies without having detailed information regarding the perceptions such people have of themselves: their value systems and priorities, their fears and aspirations, and their customs, traditions, and taboos. The purpose of this discussion is to highlight some techniques that might be useful to planners in gathering baseline data for the assessment of community energy needs, taking into consideration the importance of sociocultural concerns.

Background

Existing inventories of community energy needs and resources are woefully inadequate for the requirements of planners and program designers in the developing countries, particularly in rural areas. In his excellent review of traditional and nonconventional energy sources in the developing world, David Hughart notes that there is evidence of

> widespread shortages of the traditional and nonconventional fuels on which an estimated one-half of the world's population relies for cooking and other energy needs. Collection of these fuels, which include firewood, charcoal, dung, and the inedible portion of agricultural crops, has become in some areas an important demand on the labor and cash resources on which agricultural development depends. Estimates of traditional fuel supply and demand are presented, but the data base in this field is too weak to allow much confidence to be placed in them.[1]

Lack of adequate information may well result, in part, from the lack of recognition by villagers of what constitutes an "energy" factor in their daily lives. While most of them are aware of the need for fuel, for example, few would recognize the "energy" factor involved in the time and *human* effort required to gather or cut wood. Nor would similar efforts required for drawing and hauling water be singled out as energy until, perhaps, the advent of electricity, pumped water, and home distribution suddenly dramatizes the amount of time and energy freed for use by the women and children who had previously provided the water.

Similarly, the connection between electricity and increased productivity of craft items for cash income may not be noted immediately, but the extended time available for such work ultimately will result in observable change, and in so doing will bring up the question of the tradeoff between electricity costs and increased income.

The changing relative costs and degrees of availability of energy sources and usage systems in less developed communities are difficult to quantify, but their effects are readily apparent. There is, for example, a tendency for traditional sources of energy for agricultural work—draft animals and beasts of burden—to be replaced by more modern technologies when forage becomes limited or when the change is made to seem attractive. Often, however, the apparent benefits of the modern technologies prove to have more hidden costs and fewer corollary benefits than the traditional source—benefits such as fertilizer, hides, and milk. As the costs of obtaining energy from the new systems escalate, the benefits of the more traditional systems may be reconsidered.

Community energy needs, resources, and uses thus constitute a special form of interactive dynamic, difficult to quantify, and almost always responsive to community value systems that are themselves not always easy to determine. Our aim here is to explore some of the techniques for determining what these factors are and how they can be interpreted and used for planning purposes.

Social Science and Energy

The social science methodologies needed to obtain data on behaviors, attitudes, and social organization related to energy are in some ways less difficult to implement than the "software" components for projects involving, for example, water supply and excreta disposal or contraceptive usage, as the latter often involve taboos or matters of a highly personal nature. Energy needs and resources, on the other hand, are more complex and interrelated, and therefore must be viewed in a holistic way within the environmental setting, the sociocultural context, and the changing economic systems.

> Energy production in a village ecosystem is highly dependent on agriculture. The village energy system tends to be a tight subsistence economy, in which little material output is wasted and most energy is produced and used locally. A change in the number of livestock or the ratio of grain to straw (as in the introduction of high-yielding varieties) could upset the balanced subsistence village energy economy, which uses dung and straw. Labor availability for peak agricultural seasons will be affected by time needed to collect fuelwood. Draft animals provide pulling energy and dung, and consume straw. Dung used as fuel rather than fertilizer affects soil fertility; and housing and cattle fodder compete for crop residues used as fuel. Conventional surveying does not take into account the complexity of these relationships.[2]

The social science techniques that have been found most useful in determining existing attitudes and practices, as well as in designing more acceptable and effective projects, are those in which the local people have been most involved in the identification of the community's felt needs and priorities. When problem-solving approaches involving extensive community participation are substituted for or used in addition to standard social science techniques such as structured questionnaires, the result is dialogue between the community users and the agency facilitators or social scientists involved in project promotion and research. Much more data is generated than simply answers to preconceived questions.

Face-to-face communication raises awareness of present practices and alternative opportunities and defines problems and priorities. Ultimately, joint analysis by the community and the social scientists or development agency leads to a greater understanding of needs, resources, and alternatives.

The field methods used to achieve this dialogue must be flexible enough to relate to local populations, agencies, and research personnel and to the overall situation and research data needed. A holistic approach that takes into account the perceptions of the environment by the people (as individuals and as a part of a cultural group), along with those of experts and officials, is suggested as suitable.

In her excellent study, *Guidelines for Field Studies in Environmental Perception,*[3] Anne Whyte has listed 24 field methods, most of which are potentially useful in analyzing energy needs, uses, and resources in developing countries. Along with full discussion of the techniques, she has indicated time and training requirements, including indications of methods that can be carried out by assistants trained in the field. System variables are indicated, along with notations as to whether these techniques are applicable to literate or nonliterate populations and tolerant to local variations in format and procedure. References to survey literature on the different methods make it possible to evaluate more thoroughly the most appropriate technique for a given situation.

Basic Approaches to Field Research

As we evaluate various field techniques designed to promote an understanding of energy use and supply in the daily lives of people, it is important to be mindful of the fact that there is no ideal or best method. The various techniques have disciplinary over-

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tones and complexities that tend to confuse the picture in transdisciplinary, international research. Nearly all data-gathering techniques, however, are based on a combination of three main approaches—observing, asking questions, and listening—that are or should be mutually enriching and complementary.

Observing

The first approach to gathering data is observation. Observation can be direct or indirect, structured or unstructured, and there are various specialized observation techniques. Observing actual behavior is a basic tool for understanding energy needs and uses, especially within the context of household economies. Public behavior is, of course, much easier to observe and analyze than are practices within the private sphere.

Along with community knowledge, practices, and beliefs, which questionnaires may reveal, there is a need for detailed information on individual behaviors, attitudes, and hopes. Ethnographic data highlighting some of the more intimate household routines and energy uses can be obtained through indirect observation, indirect questioning, and participant observation. The key informants here would be the women, who make the decisions regarding the household economy.

Participant observation, which encompasses observing, listening, and asking questions, used to be considered primarily an anthropological method for understanding foreign cultures, but it is being used more and more as a tool for obtaining valid data and can serve as an adaptable method for field investigation of energy uses. In participant observation, the researcher lives with and participates in the daily life and activities of the people being studied. As a specialized technique, participant observation is less concerned with tools for handling data after they are collected than with obtaining valid data.

Understandably, the researcher's own perceptions and experiences condition the collection and interpretation of data. Nonetheless, foreign expatriate researchers have some advantages over social scientists working in their own cultures, because, as Whyte suggests, "they can reasonably maintain an attitude of ignorance and naivete which enables them to ask simple questions and to repeat them in the manner of a child seeking information." Expatriates working alone without local counterparts can get false or partial information. Sharing information with colleagues and participants is thus essential from the point of view of improving individual research results, as well as from a code of professional ethics.

Behavioral mapping is a simple and reliable technique of observing and recording specific behaviors in relation to specific locations. This technique was used in one project to determine relationships between water use and defecation patterns in order to identify possible reuses of grey water and culturally acceptable locations for bathing, laundry, and latrine facilities to maximize health and sanitation. Similar observation could be a useful device for analyzing daily energy needs, resources, and available options.

Map-making, the actual preperation of a wall map, noting households, streets, and community resources, is an extremely useful tool. In Chan Kom, a remote Maya village of 650 people, the students in the sixth grade social science class, together with their teacher and the researcher, conducted a household survey and prepared a village map showing existing electricity and water services and house types. The map is still used by the mayor and the teacher, as well as by outside agencies, as a basis for planning. In fact, villagers used the research data and map to develop a proposal for improved housing, for which they received a government grant.

The techniques of *pictorial analysis* and *sorting* were used by the director of a successful integrated rural development project in Colombia to resolve difficulties between the villagers and an interdisciplinary research team. Selected villagers were requested to sort photographs of the community into categories of needs or priorities, and then to arrange them in order of priority. Although the villagers categorized the needs and problems somewhat differently from one another, parallels could be drawn with respect to their priority listings. When this same task was assigned to the professionals, they sorted things in very different categories, according to their disciplines. Most significant, however, was the fact that their understanding of the priority needs of the village were very different from those of the villagers. The comparison of the two interpretations provided an excellent tool for self-analysis on the part of the staff and a new understanding of the need to give a high status to village priorities.

Asking Questions

Another important data-gathering approach is *asking questions*—conducting interviews and surveys. In a series of World Bank case studies on appropriate technology for water supply and waste disposal, structured interviews with local leaders, adapted to the local situation, were used successfully in one village in Guatemala.[4] In another village, a more open-ended, unstructured schedule was administered to obtain information from leaders and innovators. The dialogue of the interviews in both villages gave the leaders an opportunity to explain local needs and resources as they viewed them and to discuss possible alternatives, including past projects that had been unsuccessful.

The interview becomes an exchange of information and not just an extractive process. In interviews with knowledgeable people such as midwives, healers, and storekeepers, new clues to problems, needs, and resources often surface, sometimes more basic to reality than the information of the formal community leaders. Interviews of selected families or categories of people, such as moth[illegible] can be extremely useful if conducted over a period of time, so that specific subjects of interest can be explored in depth.

The important thing to remember in all interviewing is to record the interview in full, using the language of the respondent when possible. Taping is a useful tool, but is not always appropriate during the interview session. If sociological surveys are needed, they should be based on the results of the preliminary interviews and on prior observation, and should be designed in local terminology and categories meaningful to the people.

Listening

An important listening technique is *oral history,* a method of recording answers to open-ended questions concerning a single topic or specific topics. With good rapport and sufficient time, material collected in this manner has high validity and is less researcher-dominated than most. Historical material on past programs can be secured in this way, including political implications and agency fiascos as remembered by the villagers. This technique is particularly useful with the elderly.

In fact, talking with the elderly often t[illegible] the wisdom that formal science has been able to unlock.

> In Kenya, foresters and other authorities . . . have stated that it is impossible to propagate the valuable indigenous tree, *mugaa* . . . which is a prized local hardwood tree. . . . We asked an old man, who looked at us pityingly and said, "Why, every uncircumcised herd-boy knows how to grow a *mugaa.* The seed must be chewed by a goat and after it has passed through the goat's intestines, you pick up the seed from the goat droppings, and plant it. And then it will grow."[5]

He was correct.

Informal listening, particularly listening to schoolchildren, can add new insights to research efforts. A more structured approach to recording children's perceptions can also be useful. According to Whyte, the periodic reports of over 15,000 selected schoolchildren on their observations regarding the presence of certain lichens added depth to an environmental study in Britain at very little cost. Listening to statements that are not answers to structured questions can be vital to the data-gathering process; often we do not know the questions to ask.

Conclusion

As noted previously, there is no single best method for gathering data, nor are the more sophisticated research instruments designed primarily in the language and categories of

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be radio, as it could provide the instructional content for teacher training.

The government of Nepal therefore began working with the U.S. Agency for International Development (AID) to design a project to procure the facilities and prepare staff to produce radio programs and self-instructional materials for a large-scale teacher training program—the Radio Education Teacher Training Program. Southern Illinois University at Carbondale, under contract to AID, is helping Nepal develop its expertise in radio education.

During the project's pilot year 1980-81, emphasis is on staff development and the preparation of radio scripts and self-instructional materials. One hundred teachers are participating in this phase of the program. The year-long training program is expected to reach 1,000 teachers in 1981-82 and 2,500 in 1982-83. At that point, the educational program may be expanded to reach other target groups in Nepal.

The plan for the formal year-long program includes an opening two-week orientation workshop, 10 months of formal radio instruction, visits to the schools by specially trained field supervisors, and a four-week summary workshop. The 10 months of formal instruction are divided into two-month segments, each segment consisting of six weeks of radio instruction, one hour a day, six days a week. Each six-week instructional period is to be followed by several days of face-to-face instruction at a workshop center, to which teachers will travel, usually by walking for several days.

Power for the Radios

As plans for the radio education project were being developed, the question of the most suitable power source for the radio receivers was raised. Although the number of hydroelectric plants in Nepal is increasing, it will be years before electricity is generally available in the rural areas. Further, per capita income is only $122, so the cost of batteries to operate the radios cannot be taken lightly. Project planners therefore developed a series of research studies to explore the cost and feasibility of using solar cells connected to lead-acid batteries, and the costs involved in using various brands of dry cell batteries available in the local market. Field work has also been conducted to determine whether teachers and district education officers are able to assemble the solar cell power packs properly and connect them to the radio.

Project Hardware

The radio receivers used in these studies were the ones selected for general use in the Radio Education Teacher Training Program. The receiver, designed for a UNICEF project and manufactured by ITT, is a 9-volt radio designed to use six "D" size 1.5-volt dry cells. It also has an external jack for 9-volt direct current input.

The solar cell pack that was tested uses a solar cell rated with a maximum output of 12 volts. Manufactured by Solarex of St. Louis, Missouri, it was designed to be mounted on a pole or other firm surface. This solar cell was connected to a sealed lead-acid rechargeable 8-volt battery, manufactured by Gates Electric. The cost of the solar cell panel and the battery, delivered in Nepal, was U.S. $183.57.

Various brands of "D" size, 1.5-volt batteries were used in the studies, with six batteries providing the required 9 volts to operate the radio. The costs listed below are April 1980 prices. (Note: 12 Nepalese rupees = U.S. $1.00.)

Brand	Cost	Battery Life	Cost/Hour
Eveready 950-1R20	Rs 3.00	202.3 hours	Rs .0157
Eveready Leakproof	Rs 3.50	306.7 hours	Rs .0114
Toshiba Anand Yellow	Rs 3.50	292.7 hours	Rs .0116
Toshiba High Power	Rs 3.25	308.7 hours	Rs .0105

Testing the Solar Cells

The question of Nepal's terrain and weather and how they would affect solar power generation was a major one requiring investigation. Nepal consists of three main geographic areas: 1) the terrain next to India, with an elevation that ranges from 100 to 1,000 feet; 2) the middle hills, with a range in elevation from approximately 1,000 feet to 11,000 feet; and 3) the high mountain areas, with peaks ranging from 11,000 to over 29,000 feet. Nepal lies between 26° and 30° north latitude and is known for its bright, sunny weather. The monsoon season from late May to late October does include frequent rain, but the days are characterized by broken clouds. Solar cells are thus a realistic possibility for this country as a source of power.

The solar cell panel was demonstrated as fully operative at three different elevations in Nepal: 300 feet, 4,500 feet, and 9,000 feet. The watt hours produced to charge the battery ranged from .000 to 1,040, with variations depending on time of day, cloud cover, and the condition of the lead-acid battery. There appeared to be no significant difference in power produced based on differences in altitude.

The manufacturer of the solar cell panel indicated that it should be oriented at a 45° angle with the horizontal and pointed directly south. No discernible difference in the amount of power generated was noted when the orientation of the solar cell was varied by plus or minus 10° from this recommended position. When the solar power unit was properly connected, it was able to provide sufficient power to operate the radio at all times. In one experiment, the lead-acid battery was charged sufficiently to maintain the operation of the radio receiver for as much as 10 to 15 hours per week for more than a year.

The complete unit—solar power panel, lead-acid battery, and radio receiver—was delivered to each of 16 listening posts located throughout the country. Eight of these listening posts reported that the radio operated properly and that they received Radio Nepal over a continuous two-week period. Four listening posts reported a malfunction in the equipment. In two of these situations the radio, battery, and solar cell were not wired together properly. (It is possible to burn out the solar cell unit if it is wired to the battery backwards.) Four additional listening posts failed to send in a report.

Two separate field tests to determine whether local school personnel could connect the radio, solar panel, and battery revealed that people did have difficulty assembling the three pieces of equipment. Although they could be taught how to do this, it is apparent that the general population is not readily familiar with the use of radios and separate power sources. Although radios are becoming more common in the rural areas, they are operated using dry cell batteries.

Pros and Cons of Solar Cells

The tests demonstrated that the combination of the solar panel and lead-acid battery is able to provide long-lasting, trouble-free power for operating a radio receiver over a long period of time for both daytime and nighttime reception. The solar panel is judged to have a mean life of 20 years and the battery a mean life of 5 years. If the solar source were selected, it could easily operate a radio 14 to 16 hours a day or even more for up to 20 years.

Several points should be made about solar cells, however. The solar cell panel operates best when permanently installed. The lead-acid battery must be kept charged, and a stored battery loses its charge very quickly. The solar cell must also be properly connected to the lead-acid battery so as not to damage the solar panel permanently. All of this means that the solar cell power source works best when the total unit is located in a fixed location and the battery is being continuously charged. This is considered a disadvantage for the Nepal project, where it is expected that the teacher will want to listen to in-school educational broadcasts at his or her

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school and then take the radio home to listen to the teacher training program in the late afternoon. It is also anticipated that the teacher with a radio may be invited to bring the radio to the home of a friend to listen on occasion. This is good educationally, but it means that the cumbersome power source of solar cell and external battery will make such a move difficult. The process of reassembling the equipment increases the possibility of its being damaged.

Dry Cell Batteries

The 9-volt radio selected for the project uses six dry cells which are placed inside the radio case. Any brand of "D" size 1.5-volt battery may be used, and several brands are available in Nepal. At least one brand was available in each community that was visited by a representative of the Radio Education Teacher Training Project. It is anticipated that an increasing supply of dry cells will continue to be available throughout the country because of their increasing use to power flashlights and radios. A survey of lower secondary school teachers revealed that over 50 percent of the teachers owned their own radios. This included teachers from every section of the country, and this percentage did not vary much from one section of the country to another.

Pros and Cons of Dry Cells

Dry cells have the advantage of being easily inserted into the radio, and they provide a ready source of power at relatively low cost. Since the radio with dry cells is portable, a teacher could listen to the in-school educational broadcast and then listen to the program for teachers on the way home or at home.

The longest time any of the batteries lasted in the tests was 343 hours, in a study where the radio was operated only 6 or 7 hours per week. This would be twice the number of hours needed for listening to a full year of the teacher education programs, as the plan is for 150 such programs in a year. Yet it is realistic to recognize that teachers would probably listen to the radio much more than for the required teacher education program, and that two and possibly three sets of batteries would be required for each year. The question is whether the teacher would have the money when it was needed to replace depleted batteries and not miss any of the radio broadcasts, and whether the local market would always have batteries when they were needed.

In the Radio Education Teacher Training Project, the teacher would be supplied with a radio and fresh batteries at the beginning of the broadcast year. It would even be possible to supply funds for the teacher to purchase an additional set of batteries. Teachers might be told that this should be sufficient for the regular educational programs, and that they would have to bear the expense of additional batteries if they wished to listen to the radio beyond 12 to 15 hours per week.

Comparative Costs

The per-hour cost of the solar cell and lead-acid battery combination is difficult to assess accurately, as the cost is the same per year regardless of the actual amount of radio listening time each day. But using some assumptions, comparative costs between the dry cells and the solar power units can be made.

By assuming a maximum listening day of two hours a day, six days a week, 52 weeks a year, one could be assured that the teacher could listen to the Radio Education Teacher Training program, the in-school educational program, six news broadcasts (15 minutes per day), and at least one special broadcast each week. This total of 12 hours per week, or 624 hours per year, could be met by two sets of batteries costing 21 rupees per set or 42 rupees per year (about U.S. $3.50).

The solar cell and lead-acid battery combination would cost a total of 2,184.50 rupees (about U.S. $183) for the initial solar cell and first battery. One then needs to figure the cost of three additional lead-acid batteries that would be needed if the solar cells were used for a mean life of 20 years and each battery had a mean life of 5 years. Thus, the total cost of the solar cell and lead-acid battery combination for 20 years is 3,245 rupees, or 162.25 rupees per year (about U.S. $13.50).

One could purchase 7.72 sets of dry cells per year for the same projected annual cost of each solar power unit. Three sets of dry cells would provide for over 1,000 hours of listening per year, which should be more than sufficient for an average of three hours of listening per day. This would give teachers ample time for the regular educational programs and also for additional radio listening. This would still amount to less than half the cost of the solar cell units amortized over 20 years at 1980 prices.

If during the 20 years the solar power units were stolen or damaged, the replacement costs would add significantly to the power source costs. It can be noted that when the cost of the solar panel unit is amortized over a 20-year period, the annual cost is still more than 2.5 times the cost of dry cells when the radio is operated over 36 hours per week.

Conclusions and Recommendations

The surveys conducted in Nepal indicate that dry cells are more easily used by teachers in Nepal as the power source for their radios, particularly because they permit the use of the radio as a portable unit. The solar cell unit works best when it has been permanently installed, thus limiting the portable use of the radio. The dry cells are also more cost effective and are readily available in the local markets of the villages of Nepal. Project personnel recommended the use of size "D" dry cell batteries for the Radio Education Teacher Training Project, choosing brands that have the longest mean life in actual listening tests. At such time as the annual cost of solar cell units amortized over the expected life of the unit approaches the cost of three sets of dry cells, reconsideration should be given to the use of solar cell units. ■

This article was prepared from reports written by Jack W. Graham and Donald D. Paige of Southern Illinois University at Carbondale. For information contact the authors or William F. Morey at the Radio Education Teacher Training Project, Southern Illinois University at Carbondale, Carbondale, Illinois 62901, U.S.A.

Research on Photovoltaic Power for Earth Stations

The Rural Satellite Program recently undertaken by the U.S. Agency for International Development (AID) has become part of a photovoltaic research and development effort being conducted by AID's Office of Energy, in conjunction with the NASA/Lewis Research Center (LeRC) in Cleveland, Ohio. AID's Office of Energy has been working to develop solar power for equipment needed for various AID projects worldwide. One successful project that has resulted from this program is a solar-powered grain mill and water-pumping station in Upper Volta, a project that has attracted much attention. Presently under development is a photovoltaic refrigerator that will be part of the "cold chain" for managing vaccines in tropical climates. The Office of Energy and NASA/LeRC have agreed to make communications their priority for the next phase of the Photovoltaic Development and Support Project.

AID's Rural Satellite Program is a five-year program to demonstrate the application of satellite technologies to solving the communication problems that impede development efforts in rural areas of developing countries. The program has furnished NASA/LeRC with the power requirements of a typical small satellite earth station to be used in projects in several developing countries. The hope is that NASA/LeRC will be able to design a cost-effective photovoltaic power unit for the earth stations and thus permit cost savings in the operation of project earth stations.

For further information on either the research described above or on the Rural Satellite Program, contact Lawrence Frymire, Agency for International Development, DS/ED, Room 315, SA-18, Washington, D.C. 20523, U.S.A. ■

The Xavier Institute of Communications Moves from "Big Media" to "Little Media"

As development institutions grow, they frequently expand their capabilities to include media that are technologically more complex. Less common is the institution that expands from the technologically complex to the simpler media in order to accommodate a greater range of social *complexity. This profile of the Xavier Institute of Communications in India indicates that it has attempted the latter shift—not without difficulty.*

The Xavier Institute of Communications (XIC), located in Bombay, India, is primarily an educational institution that also invests to some degree in media production and research. As an educational institution, XIC conducts programs in media training. At the professional level, it runs evening courses leading to a diploma or a certificate in various branches of the mass media. At the high school level XIC conducts "Mediaworld," a brief course in communications for senior students. XIC's program to use the media for adult education is called "ASTHA," a Marathi word meaning "concern."

A metropolis such as Bombay is naturally the home of large numbers of the adult poor — "marginal" members of society who have had little access to formal education. Generally, these illiterate adults are either ignored or exploited by the mass media. Cinema, for example, functions quite effectively as a narcotic for such an audience. It was in this context that XIC asked: Can a program of media education for the poor serve to liberate rather than enslave them?

The Adult Education Project of XIC was initiated in 1974 when a group of students from the XIC broadcasting course proposed an experiment to see whether television could have an effect on improving the learning skills of adults with no formal education. With this purpose in mind, XIC contacted the Bombay City Social Education Committee (BCSEC)—a municipal organization that conducts literacy programs—and Bombay Doordarshan, the television broadcasting entity. Thus began XIC's investment in television for literacy.

From 1974 to 1978 two television series were broadcast to illiterate adults in Bombay City. After an intensive evaluation of the first series, the syllabus was widened to include not merely functional literacy, but social education as well—that is, concepts of health and hygiene, work and unemployment, nutrition and disease. Literacy was closely interwoven into the pattern of these social themes, but it was not the primary emphasis.

As the project expanded and attracted notice, strong pressure was placed on XIC to aim beyond mere social awareness to political awareness (or conscientization, after Paulo Freire). Through prolonged contact with adult education workers and adult groups, the consciousness of XIC was raised on two important points:

- Illiterate adults might not know how to read or write, but they frequently have a strong sense of social responsibility and of folk culture, and they are not politically naive.
- If education is a process of growth, then literacy must flow into more than simply information on social themes. Adults must be made aware of the political universe in which they live, so that they can begin to take charge of their lives. This inevitably leads to conflict with the opposing factions of society.

As the project expanded to encompass these ideas, the staff of XIC began to see that television was not as useful a medium in bringing about adult awareness as they had once thought. First, there were endless frustrating struggles between the bureaucracies of Bombay Doordarshan and BCSED (the two collaborating bodies on the project) and the idealism and energy of the XIC group. Second, television is by nature a mass medium, aimed at consumption by a mass audience, and tends not to promote discriminating thinking. Was it, then, the proper medium for conveying messages that were meant to encourage critical thinking? Third, if political awareness (conscientization) was an ideal for the adult education program, would a government-run, pro-establishment organization such as Bombay Doordarshan dare to broadcast critical programs?

These questions agitated XIC for a long time and were at least partly responsible for making it turn away from mass media and toward media that could effectively stimulate the critical awareness of the poor. If the mass media were a soporific, then group media—media proportioned in quality, expense, sophistication, and use to a group's experience—might well promote a participatory mode of learning, cooperating, and finally organizing for a better community.

It is important to make two points at this juncture. First, up to this time there had been a heavy emphasis on the *content* of the adult education programs, an emphasis that precluded proportionate attention to the media form. Much of the discussion at XIC had centered on conscientization versus literacy, on key words and their value, on the inadequacies of the old syllabus. Great emphasis was placed on the training of animators and on the creation of new centers where these animators could function in a "clean" situation, uncontaminated by faulty teaching methods. Much was invested in creating a network of new centers where XIC could put into practice a new methodology: the pedagogy of conscientization. Unfortunately, for whatever reason, a proper investment in group media was not undertaken at the same time with the same emphasis.

The second point is this: XIC is an educational institution, concerned with forming values, attitudes, and skills regarding the media. As such, its objectives are different from those of a social welfare organization, a resource agency, a commercial institution, or a sponsoring body. Inasmuch as its specific area of education is media and communications, it looks primarily to the *communications component* of each subject, asking itself how something can be communicated more effectively through the media or through communications skills.

Thus XIC made the transition from television to audiovisuals, from a medium requiring heavy investment to one proportionately less expensive, from mass-structured media to flexible, more specific group media, from video to slide shows.

Since July 1979 ASTHA has emphasized the production of slide shows along three themes —work and unemployment, health and hygiene, and reinterpreting folklore in modern, critical terms. These themes were selected on the basis of research conducted in the context of the earlier approach, adult education through television. All of the slide shows except one have been produced in color, with an accompanying soundtrack on cassette. The soundtrack is in either Hindi or Marathi, with an English script also available. Two suggestions are under consideration regarding distribution of the slide materials: either marketing them under XIC or forming an audiovisual archive with facilities for lending material to subscriber members.

As the audiovisuals have been produced, a valuable resource of print and pictorial material has been built up—a Photo-Bank. This collection of photographs on life in Bombay, particularly its slums and tenements, the workers and their social life, is used both for documentation and as an aid for teaching visual literacy.

ASTHA has also been working to develop a puppetry unit. Behind the diversity of media lies ASTHA's philosophy of "proportioned use," that is, the use of media that can promote the greatest possible participation from a group. The popular medium of puppets seemed to fit this concept well, so three or four members of ASTHA have invested their time in fashioning, scripting, and producing four skits using glove puppets. Their modest efforts have been quite successful.

If the production of audiovisual materials in various forms has been a positive achievement in recent months, the work of the

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A Communicator's Checklist

1 ***Participation, Learning and Change: Commonwealth Approaches to Non-Formal Education,*** edited by Paul Fordham (London: Commonwealth Secretariat, 1980) 223 pp.

Participation, Learning and Change is an effort to condense the presentations and meanderings of a Commonwealth Conference on Non-Formal Education for Development, held in New Delhi in 1979, into a coherent examination of the educational and development concepts, practices, issues, and solutions included under the non-formal education (NFE) rubric. The book is basically composed of excerpts from conference papers and project case studies, organized and connected by the comments and insights of the editor. Given the enormity of the topic and the diversity of views and experience of the presenters, Fordham is to be commended for capturing the richness of NFE experiences and describing many of the crucial elements and issues of NFE efforts in the developing world.

However, the excellent case studies, project descriptions, and model curricula scattered throughout the book do not overcome the book's main weakness, one inherent in conference proceedings: it too often lacks continuity of thought, sequential analysis of problems, and precision in the development of ideas. Sections of conference papers are interspersed with the editor's comments and incorporated into a superimposed organizational framework. This results in a mosaic of ideas and experiences in which the transitions from the editor's commentary to the excerpts from conference papers often leave the reader uncertain as to whose ideas are being presented and which problem is being addressed. As is perhaps the case with NFE efforts in general, the book offers a variety of valuable insights to anyone who perseveres in sorting out the content.

Although the editor has sometimes failed in his efforts to synthesize the content, one can nevertheless discern an intended progression of thought. The book begins with the "non-formal idea" and the concepts that form the justification for NFE and its relationship to development. It then presents four target groups most in need of NFE opportunities—children not in school, unemployed youth, adult illiterates, and women and girls—with project case studies for each. This leads to a discussion of some of the methodological and pedagogical approaches and issues that characterize NFE programs, then to three contrasting approaches to evaluation and research—traditional, action, and participatory—and their relationship to NFE programs. The book then returns to the issues and problems involved in combining educational programs, both formal and non-formal, with effective development strategies in order to help "the poor" have greater control over their lives and resources. Four case studies describe in detail development projects in which an NFE component was an integrated part of the effort: the Family Development Programme in Malaysia; the Self-employed Women's Association of Ahmedabad; Nutrition Education in Bendel State, Nigeria; and the Buffalo Breeders of Bankhedi, India. The final sections discuss the issues surrounding local, national, and international cooperation and coordination of NFE programs that contribute to development goals.

Among the numerous perspectives and issues contained in the book, four deserve particular mention here. First, throughout the book, attention is brought to the importance of the social, economic, and political context of NFE efforts so often neglected by educators as they become absorbed in technical, programmatic implementation problems. The words of conference participant Malcolm Adiseshiah summarize the issue: "No matter what term we use, non-formal education is people's power—the power to change society and make it move towards the paths of justice, tolerance, understanding, and charity." The struggle for social and economic justice as both the foundation and goal of NFE programs is woven effectively into each chapter.

Second, although claiming to establish the relationship between NFE and development, the book fails to provide a clear, sharp definition of development and to justify with concrete evidence the impact of NFE programs on development indicators. There is a tendency in the narrative to assume that NFE benefits such as participation, learning to learn, self-reliance, and problem solving are sufficient reflections of program success in the development process. Although these are critical elements of NFE, the book would be strengthened by an analysis of competing perspectives of the development process and by further evidence of NFE program impact on outcome indicators such as fertility rates, agricultural output, income increases, and employment results.

Third, because the book concerns a Commonwealth conference, NFE experiences in much of Latin America and francophone Africa are not included. Similarly, little attention is given to NFE program experience with various electronic communications media in development projects.

Fourth, and perhaps most important, is the book's concluding discussion of the coordination and support of NFE programs:

> What must now be attempted is to make something of a "system" out of existing NFE programmes—without losing the established non-formal virtues of flexibility and relevance to the needs of the mainly rural poor.

A paper by Chris Duke provides an excellent delineation of the key issues to be faced in attempting to bring more coherence and support to NFE programming. These recommendations closely parallel the present USAID strategy in NFE, that of helping LDCs to establish their own national service agencies capable of identifying, supporting, and improving diverse NFE development activities. Such projects are currently underway in Lesotho and Ecuador.

In sum, this book reads easily and maintains one's interest and will be of particular use to the NFE practitioner looking for information on a variety of NFE projects and techniques. For those uninitiated to NFE, and for NFE skeptics looking for a concise, coherent explication of NFE programs and their relationship to development, this book will be a disappointment. ■

Available from the Commonwealth Secretariat, Marborough House, Pall Mall, London SW1, U.K.

Reviewed by Dale E. Kinsley, education advisor and non-formal education specialist for the Office of Education, Development Support Bureau, Agency for International Development.

2 ***Images by Car Battery: The Filmstrip at Work,*** by David R. Giltrow (Rome: Food and Agriculture Organization of the United Nations, March 1979), 123 pp.

In 1978 and 1979, Giltrow was sent to the Yemen Arab Republic to evaluate FAO filmstrips in the field and determine their effectiveness as educational tools for farmer-level audiences. *Images by Car Battery: The Filmstrip at Work* is the result of those weeks in Yemen. One-fifth of the report is devoted to an overview of the filmstrip as an audiovisual tool and to the FAO Filmstrip Production Program. The body of the report describes

the procedures for and results of evaluating certain FAO filmstrips, the full evaluation design used during his visit, and simplified evaluation approaches for action research in the field.

As a practitioner, I appreciate Giltrow's ability to combine a structured approach with his own common sense observations, as it results in the report's containing many practical ideas and bits of advice. It is, for example, obviously good practice to begin evaluating ideas early on, before serious financial commitments are made and mistakes become locked in. The author suggests that rough scripts be worked up first as audio tapes that can be played to prospective audiences to determine which treatment will be more effective. The absence of the image at this experimental stage should not be detrimental, as most filmstrips rely heavily on the audio message. The author also suggests tape recording presentations in different areas of the country in order to compare usage techniques and the effects they may have on learning. In areas where farmers are not averse to being taped, it may be useful to record interviews with them for later analysis and comparison.

Centrally-produced filmstrips often need to be adapted to local conditions. Where changes are required only in the commentary, ample white space can be provided for translation in the commentary booklets that accompany the filmstrips. These commentary booklets themselves can often serve as valuable teaching aids. The author suggests supplying duplicate offset plates for local printing of booklets or handouts in quantity. This would allow the country to print booklets using either the FAO-produced commentary or an adapted version for local use, and to save time and money as well. Where filmstrip frames themselves need to be adapted, the author has suggested providing blank spaces so that words or symbols can be scratched directly onto the emulsion side. (Note: A special filmstrip adaptation kit is available from World Neighbors, 5116 N. Portland, Oklahoma City, Oklahoma 73112, U.S.A.)

I must take exception, however, to two of the author's ideas which I feel are consistent neither with a practical approach nor with the author's expressed "shift away from a purely FAO-centered orientation." Reprocessing a filmstrip in Rome with a traveling matte in order to correct the simple problem of a faded red warning dot seems overly complicated when a red felt pen would achieve the same result more simply in the field. And there is the author's suggestion of using geometric symbols in place of letters or numbers so as to make the filmstrips adaptable to countries with different alphabets. I first question the underlying assumption that nationalities will perceive the symbols universally in the same way. I then wonder about the wisdom of demanding that an audience learn a new system of symbols in order to understand the content of the filmstrips. Even illiterate audiences would have more to gain from learning their own alphabet, should that be necessary. But why not simply adapt the filmstrip using the approach suggested previously of scratching words and symbols in blank spaces on selected frames?

The author devotes some paragraphs to the question of testing certain pieces of audiovisual equipment, but nothing is said about its cost or availability, or about repair facilities. It is stated that nearly 100 percent of the Yemenites own radios and/or cassette players, but it would have been helpful to know about the availability and cost of batteries. I was disappointed that no mention was made of solar power or of alternative energy hardware. This may be no fault of the author, of course, but the title of the report does create the expectation of such innovative ideas. Rather than "Images by Car Battery," the subtitle more appropriately indicates the focus of the report: "An Assessment of the Filmstrip in Development Support Communications and an Evaluation of Assorted FAO Filmstrips Based on Field Work Conducted in the Yemen Arab Republic."

Although it represents an admirable effort, this report is of limited value to practitioners or planners outside of FAO. Quite simply, what is of value to the profession at large lies buried in the descriptive, chronological organization of the report and is too difficult to extract. Moreover, much of the information is already known or available in a more concise form in other publications. This is not to say, however, that FAO could not find its suggestions very helpful in considering future commitments to filmstrip production. ■

The report is available from the Development Support Communication Branch, FAO, Via delle Terme di Caracalla, 00100 Rome, Italy.

Reviewed by Benedict Tisa, a nonformal educational communications consultant

3 ***The New Miracle Workers.*** 16mm film, Helen Keller International, Inc., 14½ minutes, color.

Working with the blind in developing countries is the subject of a new film from Helen Keller International (HKI). The film, *The New Miracle Workers,* documents the work of a corps of health workers trained by HKI to help the blind master survival skills and to work to change traditional attitudes toward the blind. It also describes HKI's assistance to programs to prevent blindness through health and nutrition education, and to efforts to integrate the blind into their communities.

The film features two examples of media applied to the problem of blindness in the developing world. In one example, folk media are represented by a traveling puppet show in Indonesia that emphasizes the skills of the mind. The show's hero is a mythological king who, although blind, is a strong leader revered by virtue of his wisdom. The use of radio is exemplified by a segment from the *Radio Docteur* series on health and nutrition education in Haiti. A radio message impresses on mothers that vitamin A deficiency in their children can cause xerophthalmia, an eye inflammation which, untreated, can lead to blindness, and that vitamin A supplements are available at mobile health units. Communities are alerted to the arrival of the mobile unit by a loudspeaker announcement—another application of communication technology to serving the public good. ■

Available on loan within the United States from Modern Talking Pictures Service, 5000 Park Street North, St. Petersburg, Florida 33709. Others may contact Margaret Bayldon, Helen Keller International, Inc., 22 West 17th Street, New York, New York 10011, U.S.A.

4 ***Interview with George C. Stoney: Using Video for Community Development.*** Videocassette in ¾" U-Matic and Betamax X-1; also audiocassette only. 20 minutes, black and white.

For the communicator or community organizer familiar only with the mass media uses of broadcast-quality video, this videotaped interview with George C. Stoney, professor of film and television at New York University, will open a window to the potential of video as a tool for social motivation. Stoney identifies this "other" use of video as "communications to help people do something."

Building from a background in producing educational films to change behavior, Stoney took his skills some time ago to the National Film Board of Canada's Challenge for Change program, the purpose of which was to use film to improve social conditions. It was there that he became interested in the potential of video for similar purposes.

To illustrate this potential, Stoney describes a typical community situation in which two groups aligned on different sides of an issue cannot communicate publicly with each other, whether from shyness or other inhibiting factors. Small videotape equipment can be used to alleviate such a situation: a person's thoughts on the issue can be recorded, played back to him or her for accuracy, then played at a public meeting. This frequently has the effect not only of presenting the views of one who would not normally speak out, but of giving that person the courage to add to the taped comments in the public setting. In such a set-

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ting, at the point where people begin to speak freely of their concerns, the use of video can be dispensed with. It has opened the necessary communication channels.

Another example Stoney gives is the use of video to document a physical condition requiring change. Video is a valuable tool in providing evidence to decision makers who would not normally visit the site in question.

Stoney discusses other issues such as the initial difficulty a community organizer may experience using this new tool, why and when to use it, its cost effectiveness, and the danger of overrating its ability to effect change. Stoney points out that simply knowing how others feel does not solve a problem; video can validate protest and support individuals who feel threatened, but it is only a device for initiating the processes of change. ■

Available on loan from International Educational Development, Inc., 815 Second Avenue, New York, New York 10017, U.S.A.

Films reviewed by Judy Brace

Publications to Note

A new publication, ***VER: Video Educativo Rural,*** is available from the Centro de Producción Audiovisual para la Capacitación (CEPAC), a UNDP/CENCIRA/FAO training center in Lima, Peru. The newsletter, produced in Spanish, is designed to present information on projects that use video for training adults. Two of four planned issues have appeared; audience response will determine whether the publication will be continued. For information write CEPAC, Apartado Postal 4480, Lima, Peru.

Health Education by Television and Radio: A Selected Bibliography, compiled by Manfred Meyer, et al. (Munich: Internationales Zentralinstitut für das Jugend- und Bildungsfernsehen, 1980), 75 pp.

This briefly annotated bibliography of 196 items was prepared for the participants in the Internationales Zentralinstitut's International Information Week 1980, on "Health Education by Television and Radio." The listings, mostly in English with a sprinkling of German and French, concern the use of the mass media for health education and for the dissemination of information on health problems. Annotations are in the form of a listing of relevant key words. Although the subject and author indexes add to the usefulness of the bibliography, it would be improved with the addition of a source listing with addresses to help readers obtain the listed documents.

Bibliography available from the Internationales Zentralinstitut für das Jugend- und Bildungsfernsehen, Rundfunkplatz 1, D-8000 München 2, Federal Republic of Germany.

Dear Aimee—

Someone to Answer Your Questions about Africa

by Jean-Marc Fleury

No matter who you are, or wherever you may be, if you want to know more about Africa, its philosophers, its cooperative agencies, or even how to raise rabbits there, someone is ready to help you. Her name is Aimée Adou, and she lives in Abidjan in the Ivory Coast.

All kinds of people write to Aimée. An elementary-school pupil asked her, "What is dirt made of?" A teacher wanted information on building a pigpen and raising pigs. Many of those who write are teachers and students—but there are also mechanics, postmen, and farmers. In 1979 Aimée answered 211 letters from 17 African countries and several Western nations. Many African students in Europe also wrote to her.

When the questions are clear and to the point she replies the same day. But some letters require more research; for example, that of a teacher from Togo who asked, "Could you provide me with a list of African authors and philosophers and the titles of a few of their works?" Aimée's reply consisted of photocopies of documents, a page of bibliographical references, and 11 solid pages of names of African philosophers and their works. Some questions might call for whole theses in answer.

Most of the questions deal with some aspect of individual or collective development, and Aimée tries to provide prompt, practical answers. Sometimes, however, the letters contain very tricky questions, such as one received the day of our visit, "Of the United States and the USSR, whose policies are appreciated more in Africa, and why?"

As you may have guessed, Aimée Adou does not have all the answers herself. She is a member of the Permanent Question/Answer Service team, part of the African Institute for Economic and Social Development (INADES) in Abidjan. When the service was created, with the aid of funds from the International Development Research Centre (IDRC), INADES wanted to make available to *everyone,* not just to researchers and academics, the vast resources of its library, one of the richest stores of information on Africa in all of francophone Africa.

Even before the service was created in 1977, INADES received some 50 requests a year for information. When it realized the lack of readily available information about Africa, the institute sought to provide an information service accessible to anyone who could write a letter.

"The service is an experiment," says Mr. E. de Rosny, Director of INADES, "intended to encourage people to write down their questions. Everyone agrees that African society has always been one of communication," he explains, "but oral communication is no longer enough. Hence the importance of the transition from oral to written expression. There are many ways of doing this: school is the most obvious. The information service makes another modest contribution."

At INADES it is hoped that this transition from speaking to writing will be done in a human way. In school, people are obliged to learn to write, but this service gives people the opportunity to use their new skills willingly. "The unemployed worker in Treichville (a part of Abidjan), who one day picks up his pen to ask us how to become an electrician: that man has made the transition to the modern world," says Mr. de Rosny.

Unemployed, civil servant, or scholar, all will find through the service someone ready to help them plug into the knowledge needed for informed action. With Aimée are Jeannette M'Bengue, a specialist in agricultural information, and Nicole Vial, the service's director. They can also rely on the assistance of the INADES librarians, researchers, and secretaries.

The service team also provides rural project leaders with suitcases of books on agriculture, history, or health, along with novels and magazines to be read just for fun. About a dozen of these small suitcase libraries crisscross Africa. In January 1980, 10 were in circulation.

Theoretically, anyone who can write a letter can use the service, but first people must be aware that it exists. This is the main challenge facing the team: making themselves known. So far magazines, newspapers, and radio stations have agreed to publicize the service. A magazine has undertaken to publish two sample questions and answers on a regular basis. But a great many more people must be reached if the service is to function as it should.

The extraordinary thing about a medium such as the Permanent Question/Answer Service is that the questions themselves contribute to the quality and the efficiency of the service. Aimée keeps a record of each question received and is gradually assembling a bank of information on those most often asked, anticipating areas of popular interest. Thus, your letter will be useful not only to you but to many other clients.

Any more questions? Ask Aimée! Her address is SPQR, INADES/Documentation, B.P. 8008, Abidjan, Ivory Coast. ■

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cooperation between various support services so field technicians can have needed input for integrated projects.

Forestry service goals and rewards may also have to change. Goals such as straight rows of tall exotic trees must give way to emphasis on community participation, even if the rows are not quite so straight nor the trees so beautifully planted. Technicians have a right to expect personal benefits from successfully implementing this new type of forestry. They have the right to have their formal and academic training and rigid pay structure reexamined in light of this new type of forestry. Agents who take specialized training in community forestry and who work in the field to implement successful projects should receive merit pay raises.

On the other hand, donors and villagers have the right to expect a new focus by foresters on developing appropriate low-cost technical packages. Donors and villagers have a right to expect needed management skills and supports from foresters, extension personnel, or project managers. If extension personnel are used, they may need training in the two-way communication expected in FLCD, as many extension services in Africa concentrate on teaching roles rather than facilitating roles and might tend to present programs to villagers rather than develop programs with villagers.

Donor Expectations and Obligations

Donors also have new expectations and obligations when they participate in this type of approach to forestry. They may expect more active participation from both villagers and technicians, more and better designed project proposals, and more successfully completed forestry projects.

On the other hand, they will have to be willing to fund the less glamorous support and institution-building required by this new approach. They will have to reassess the goals of their projects and be willing to support more small experimental projects before embarking on large-scale showcase demonstrations. They will have to accept flexibility built into project design, and designs that differ village by village and are therefore more difficult to administer.

Project Management Agreements

Project experience has made it clear that there is a lack of communication, a great deal of frustration, and much confusion about responsibilities by all parties involved in forestry projects. In line with FLCD philosophy, responsibilities and duties of citizens and support agencies should be clear from the beginning of any project. One way of approaching this problem is through a management plan discussed, agreed upon, and signed by all those involved. This agreement, written as part of the project design, will involve local participation and lead to better communication and better planning. Most of the projects that fail do so because one or more of the following six elements were unclear when the project began:

- identification of participants
- long- and short-range goals
- site selection
- start-up and maintenance plan
- benefit distribution plan
- evaluation plan with feedback and flexibility potential for altering the program.

A written project management agreement could help clarify these project elements at the design stage. The importance of this type of document would increase with the size and complexity of the program, but these six items should be considered even if the project is carried on by individuals on their own land. The format and semantics will vary depending upon the country, the agencies involved, the local administrative structure, and the desires of the participants.

Several types of contracts have been used in community development or production projects. One which has been used in Latin America is in the form of an application for a community service award. Applicants outline elements of their proposed project in a few sentences, listing all participants, and if the application is approved, the award is given at completion of the project. A second type is used in Senegal by a production-marketing organization. This is a contract between a group of farmers and the organization, whereby farmers agree to grow certain irrigated crops according to directives of the organization, maintain the irrigation ditches, and sell all their surplus produce to the organization. The organization, on the other hand, agrees to give them technical advice, sell them needed fertilizer or other inputs, and lend them an irrigation pump. All members of the group are responsible for debts of any members, and if the farmers default in any way, the organization will remove the pump. Although this is clearly an "employer" biased contract, it does make the requirements of the participants clear. One observer found that the contract stimulated discussion among community members and acted as a medium for community awareness and participation.

An agreement or contract more applicable to FLCD projects is used in the Uttar Pradesh Social Forestry project in India. Called a "Proforma Agreement for Village Forests," it is written in formats for either forestry service plantations or village plantations. It gives a seven-page description of the purpose of the project, requiring only that several blanks be filled in with such information as number of days of voluntary labor villagers agree to provide and the amounts of land donated by the government and by the village. Villagers agree to pay for forestry service inputs but are guaranteed firewood and any profits beyond these costs. This contract requires that a mutually acceptable operational and financial plan be attached. The agreement is specifically designed for one type of forestry project and has proved to be successful because it is tailored for a specific area where there is strong community organization with a long-standing plan of voluntary community service.

Fuelwood Transformation

Thus far our discussion of FLCD projects has focused on production. The next step after wood is produced is transforming it from a tree to usable fuel with as little waste as possible. Not much attention has been paid to examining this step, yet fuelwood production is only as effective as the amount of fuel that arrives at the hearth and the amount of food it cooks. Transformation issues include more efficient harvesting, charcoal making, transportation, and drying and storage.

> *"People themselves are the agents of processes of change, and therefore the participation of people cannot simply be seen as an element of development, or an option open to development planners, but must be recognized as a condition for development."*
>
> Jeremiah O'Sullivan-Ryan

Traditionally, most fuelwood is collected for the family by women breaking dead branches from trees. Men help in some areas where larger logs are used for fires, and where women have used all locally available branches so that wood must be brought from greater distances. When dead wood is no longer available, trees may be killed by girdling, by chemicals, or by fire made selectively by piling branches around the base of a selected tree or less selectively by burning larger forested areas. As pressures increase, women substitute millet stalks, peanut hulls, dung, or other agriculture products that have important alternative uses, or they may even use saplings or fresh branches from fruit- or nut-bearing trees.

Even the traditional collection of dead branches wastes potential fuel, as the logs are frequently left to rot before they can be hacked into usable pieces with locally made hatchets. The burning and use of saplings or green wood further reduces the potential energy supply. Donors have suggested that commercial harvesting should be encouraged

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to salvage trees from dam sites or other land being cleared. This could be extended to salvage wood from less inhabited areas where dead trees from drought are still visible in large quantities. Reports from Nigeria, Sudan, Kenya, and Upper Volta discuss various commercial enterprises that collect and transport wood, ranging from the Voltaic example of women collecting wood and selling it to truckers, to the Sudanese example of armed landless gangs stealing trees and leaving large regions denuded. Some of these examples illustrate the need for care in introducing more high-powered tools for harvesting and in organizing cooperative or other commercial ventures so as to assure protection of the people living in the area to be salvaged.

Dealing with such issues is not simple. Adequate solutions require regional and national planning of resources, fiscal policy, and marketing systems, and the development of local projects within these plans. For example, although Ivory Coast officials may be willing to allow residents from neighboring wood-hungry regions to salvage trees from newly cleared agricultural lands, they may at the same time need to address the issue of their own disappearing forest reserves. Although Kenyan officials may want to subsidize imported fuel while they control the price of wood and charcoal, they will want to control the smuggling of wood into neighboring countries before large areas of their country are denuded.

The idea of organizing harvesting cooperatives to salvage unused wood is excellent, as is the introduction of more efficient charcoal making. However, new technology and organizational structures for marketing wood in large quantities must be conceived not only with the good of the workers and consumers of wood in mind, but also with respect to local custom in order not to put residents of the area where the wood is salvaged at risk.

Basic to all of these considerations is transportation. Much of the wood currently going to waste is in areas where transportation expenses are quite high or where no adequate system exists to remove the wood. Governments should seriously weigh the cost of subsidizing transportation of wood, especially as a temporary measure to take the pressure off of newly planted woodlots or overly exploited lands. Energy considerations should be basic to any transportation planning, not only in evaluating energy use in water, rail, or road transportation systems, but also as to ways of transporting available wood, charcoal, or other energy-producing materials. Funding improved transport systems may be of more long-term benefit than subsidizing imported oil-based fuel, and temporarily subsidizing transportation costs of fuelwood may be essential to reforestation efforts.

Fuelwood Use

Although planting trees is important for future wood supplies, the introduction of fuel-saving stoves can have an immediate impact on available fuel. To date, however, there has been relatively little donor interest in wood stove improvement in Africa, and stoves that have been tried have had negligible success. Through the years African women have found the three-stone stove or other modifications of the open fireplace to be the most appropriate technology for cooking their daily meals. If "appropriate" technology means technology that best satisfies the need in a way that is economically and socially affordable, alternative stove designs have thus far fallen short.

In order to apply the FLCD approach to the introduction of stoves, it is important to isolate some of the problems that have handicapped the adoption of fuel-saving stoves. Many reports simply say that new technology must be taught, that extension services have been ineffective in selling the new ideas, and that traditions die hard. But these criticisms tend to focus on the dissemination stage of a project, which all too frequently takes place before the experimental process has been completed. Many projects appear to be weak in four fundamental elements in the original stove designing process: failure to identify actors and their roles in developing stove designs, failure to establish criteria for introduction, failure to identify physical and social reality and the tradeoffs and risks of each change, and failure to establish effective criteria for evaluating "success."

If stoves were being designed for researchers in laboratories, there would already be many stoves that successfully fulfill all artistic and technical requirements. The researchers sometimes forget, however, that the primary actor, the audience that ultimately approves or disapproves the design, is the person with the greatest expertise—the woman who cooks every day. It is a major failing of researchers not to recognize the cook as an essential part of the cast of research experts. The second group of individuals who should evaluate and participate in the successful adoption of a stove design are the women leaders, the extension agents, and sometimes local officials —the essential salesmen and the judges of a successful model. A third group who may be involved are the local artisans. If a stove design requires metal work, masonry, or changes in sizes or shapes of utensils, it may be up to the local craftsmen to help design these changes within local capabilities and be ready to make repairs and alterations. They can also provide valuable information that is frequently missing in developing stove models.

When stoves that fit laboratory or Western standards of improvement are brought to Africa, they frequently lack the bare minimum of usefulness in the African setting. Before a design leaves the laboratory, it should be tested for its basic utility for specific areas. If it cannot hold the heavy pots, cook hard grains into mush for lengthy cooking periods, or perform the basic requirements for a certain locality, it should not even be introduced—a self-evident requirement that is frequently ignored.

Solar cooker specialists have been even less socially aware than wood stove technicians in their requests that women stand over pots stirring slow-cooking foods on stoves that are uncomfortably hot even to approach in the African sun, or that take one and one-half hours to cook a soft-boiled egg. They suggest that women can easily cook in the daytime instead of the evening, without noticing that during the day the women are working in the fields and need that time to grow the grain to fill the pot. However, wood energy specialists, too, would save a great deal of grief if they looked at the purposes for which the three-stone stove is used. If they had tried cooking in one-and-one-half-foot-tall kettles, constantly stirring mush for ten people with a large wooden paddle, they would not suggest waist-high wood stoves (unless they also added step-stools), flat-bottomed pans (that burn around the edges), and lids (for foods requiring constant stirring). One report chided a woman for using a stove in a wrong and wasteful manner because she left the front open for heat in the room while she cooked on the top. Since the need in that community was for heat as well as cooking, the stove was not being wrongly used, it was simply the wrong stove.

The realities of the physical elements—the type of wood (size and shape), the size of the pot or pots (not just how many people are in the family, as the situation may require extra for unexpected guests or leftovers for breakfast), the stove or stoves used now, the food to be cooked, the process used, the place and time cooking is done—are all elements of the situation that should be known. Each time a physical element is changed, one or more social elements may be affected. For example, in a stove evaluation in Ghana, the stove required larger pieces of wood. The women who collected the wood were not willing to walk the extra distance for this type of wood when there were adequate pieces of wood for a traditional fire nearby. This, then, is a tradeoff, and one that these women were not willing to make. When introducing a potential stove design, the researchers should explore with other actors in the experimental group all of the elements that can change and the resulting tradeoffs and risks. Will the women want to use the stove when the local supply of smaller wood is gone and all fuel is the same distance away?

One frequently hears questions such as,

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"If you had a stove that used only one-half the fuel you currently use, would you cook on it?" This is not the real question. The question might more accurately be, "If you had a stove that used less fuel, would you be willing to chop your wood into eight-inch lengths, control the damper, and clean the flue?" Technicians are not in a position to evaluate these types of tradeoffs. Only if the woman is given the necessary information will she be able to make an accurate evaluation of a new stove's potential for adoption. Any time a new technology is introduced, questions such as who benefits, how, who pays, who maintains, and who introduces should be considered.

Criteria for Stove Success

One of the issues connected with all projects is that of knowing when something is successful. In FLCD terms, success relates to local people solving their problems in a way that gives them more control over their environment. It has nothing to do with the amount of energy produced in a laboratory. A cookstove is successful when it is established in a community, cooking one or more types of locally consumed food. If it solves a felt need in a way that is economically and socially affordable, it will be adopted and its use will spread.

Throughout a large part of Africa, one sees stoves used for charcoal. How is it that charcoal stoves have caught on where wood stoves have not? One could guess that since charcoal is more expensive, the women using it can afford a stove, or want to make the charcoal go further by using a stove. However, when cooking large pots of traditional slow-cooking foods, the same women who use charcoal stoves for smaller, more quickly cooked dishes will often still turn to the three-stone fire. The charcoal stove fulfills some but not all needs.

Again, although the three-stone stove is used as a symbol of a united family, this emotional factor has not stopped women from using alternative fireplaces for specific purposes. They also alter the three-stone fireplace by putting rocks or earth between two of the stones when there is wind. Women *are* willing to experiment with new stoves. If a stove really saves up to one-half of the daily fuel or more and does not require undesirable tradeoffs, what woman would choose the extra hours of hauling wood?

Demonstration and Dissemination

When it is time to launch the dissemination process, one approach the evaluation team may wish to consider is staging a village celebration. Neighboring villagers could be invited, and the project could provide food prepared using the newly designed stoves, with the women who helped develop the stove demonstrating its use. This is the time for photographers and radio discussions, the time for trained extension agents to help advise more women on building and using these stoves, the time when women who cooked on the stoves during the experimental phase might become paid para-extension agents for neighboring villages.

Another approach to dissemination of stoves comes from Swaziland. Women were brought into a training center to learn to make several appropriate technology items, including clay cook-stoves. At the end of their training, when they had completed the models, village chiefs were asked to come to a ceremony to judge which of the items the women had made would be most useful in their villages. The chiefs in this case chose the stove as one of the most useful and agreed to help support its introduction into the villages.

Unless the government decides on a fiscal policy in which metal stove burners or other parts will be subsidized, the donor would not ordinarily continue paying for materials for building stoves. The stoves are either worth the investment to the local family or they are not. However, during the dissemination phase, the donor should do whatever is necessary to support publicity, educational materials, needed transportation or training, or even salaries to help get technical information to local women. Schools, women's groups, private voluntary organizations, and volunteers could all help spread information. If there is a decision to subsidize the building of more stoves, one idea is to tie the subsidy to fuelwood production. When women plant a certain number of trees which they keep alive for a year, they could be given grills for stoves as a prize.

The emphasis here on improving wood stoves does not suggest that other approaches should not also be tried to conserve wood. There is a need to explore the use of alternate foods or processes that require less energy. In some communities, group cooking might be a solution, or foods preprocessed in a village-level industry might be investigated. In Upper Volta, a traditional practice is to soak and then precook rice before husking it, a practice that not only cuts down on the time for final cooking but improves the nutritional value of the rice. None of these ideas, however, should be explored only in an isolated laboratory; the true evaluation of the acceptability and success of any such idea must be made by the consumers themselves.

Conclusion

This has been an exploration of issues raised when residents are included in the effort to solve local fuelwood needs through forestry for local community development programs. It does not intend to suggest that this is an easy approach, but it is based on the premise that since top-down forestry is not working, FLCD may be the only viable option. It has looked at various problems that donors, implementers, and participants raise, and at possible approaches to program design that mitigate some of these problems.

It is always important to keep in mind the distinction between experimentation and dissemination-demonstration. Methodology for implementing FLCD is new, and judging from problems raised at all levels, it is still in the experimental stage. Ideas are not offered here as proven solutions but to stimulate discussion while the search continues for better techniques in a field that is controversial, urgent, and exciting. It is written in the belief that only as one shares experiences, tries out new ideas, and documents failure and success can one hope to deal more effectively with the issues and eventually to reach the demonstration-dissemination stage.

Forestry has been one of the last fields to use the community development approach. As a sound environment and the availability of forest products are vital to agricultural, industry, and life itself, FLCD is potentially of great use to community residents. By improving FLCD impact in the communities of Africa, forestry may become the basis for revitalizing rural communities and a tool with which residents can direct and control their own futures. ■

This article is excerpted from a discussion paper prepared by the author under the auspices of the Overseas Development Council and the U.S. Agency for International Development for a Workshop on Fuelwood and Other Renewable Fuels in Africa, held in Paris, November 1979. For information contact Marilyn W. Hoskins, Department of Sociology, Virginia Polytechnic Institute and State University, Blacksburg, Virginia 24061, U.S.A.

Marilyn W. Hoskins is currently visiting professor and Title XII International Programs Chairperson for Rural Sociology, Anthropology, and Community Development at Virginia Polytechnic Institute and State University. She spent five years with the African Center for Research and Development in Ouagadougou, Upper Volta, and has worked on community development, regional planning, program evaluation, and social impact studies in Africa and Asia.

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Readers are invited to submit typed manuscripts of no more than 1000 words and to send in photographs.

On File at ERIC

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- Kaye, A. R. ***The Allama Iqbal Open University, Pakistan. A Case Study in Distance Learning Systems.*** Bletchley, Bucks, England: The Open University, 1978, 33 pp. (ED 183 035)

A brief description of Pakistan and its educational system introduces this report on the Allama Iqbal Open University (AIOU), which was established in Islamabad by the Pakistani government primarily to provide adult and continuing education through the mass media. Brief descriptions are given of AIOU's history and operation, as well as its policy and legal origins; intended clientele; curriculum offerings and organization; media and methods of instruction; course creation, production, and distribution; student admission, registration, and records; financial control; institutional research; and staff and physical facilities. Available from EDRS in microfiche for 83¢ or in paper copy for $3.32 plus shipping.

- Jerez Gomez, Maximo J. ***Background on Non-Formal Education and Suggestions for the Improvement of Non-Formal Education in Developing Countries and the Dominican Republic.*** 1979, 12 pp. (ED 186 169)

Divided into two areas of emphasis, this paper explores the potential of nonformal education in developing countries and as it relates to the Dominican Republic. The first section presents background material and discusses types of programs being applied in a number of countries throughout the world. Much of the second section is based on the author's observations and experience during three years with the Extension Service of the Dominican Republic. The structure and function of each level of the Extension Service are described. The paper concludes with suggestions for the improvement of nonformal education, such as: 1) preliminary evaluation should be conducted to determine specific community needs; 2) the community should select its own development program, course, or project, as well as program leader; and 3) radio, television, written materials, songs, or theater should be used in the program in order to maintain the attention and interest of participants. Available from EDRS in microfiche for 83¢ or in paper copy for $1.82 plus shipping.

- Seligman, David. ***The Everyman's University, Israel. A Case Study in Distance Learning Systems.*** Bletchley, Bucks, England: The Open University, 1979, 71 pp. (ED 183 037)

A brief description of Israel and its educational system provide background information for this report on Everyman's University, which is a nontraditional institution offering postsecondary education by extension to a nontraditional college population. This overview of its history, purposes, organization, academic offerings, and resources covers origins; intended clientele; entry qualifications; degree programs; media and methods of instruction (correspondence study, television, radio, audiocassettes, home experiment kits, syllabi, and study centers); financial aid; assessment and examination models and procedures, including special instructions on the awarding of credit; institutional organization and administration; academic, financial, and policy control mechanisms; staff and budget; and plans for development. Appendices provide data on registration, persistence, and organizational charts. Available from EDRS in microfiche for 83¢ or paper copy for $4.82 plus shipping.

- Greiner, Ted and Latham, Michael E., eds. ***The Promotion of Bottle Feeding by Multinational Corporations: How Advertising and the Health Professions Have Contributed. Cornell International Nutrition Monograph Series, Number 2 (1975).*** Ithaca, NY: State University of New York, Nutritional Sciences Division at Cornell University, 1975, 62 pp. (ED 188 749)

This report investigating the ways bottle feeding of infants has been promoted by multinational corporations is based on data from three sources: 1) a survey of available infant food advertising in newspapers and magazines from developing countries; 2) a study of some interrelationships between the health professions and infant food companies, including a study of advertising in professional journals, and an analysis of educational publications written by infant food companies for distribution to the public, largely via the health professional; and 3) a compilation of data on multinational companies that market infant foods. An extensive discussion of the findings is provided for use by those who are concerned with the problem.

Appendices provide samples of infant food advertisements from publications in developing countries directed toward the lay public, as well as advertisements from journals for health professionals and information about world manufacturers of processed dairy products used for infant feeding, including parent corporation, subsidiaries, infant foods marketed, areas of heaviest marketing, and addresses. Available from Dr. Michael C. Latham, Division of Nutritional Sciences, Savage Hall, Cornell University, Ithaca, NY 14853, U.S.A. for $2.50 (make checks payable to Cornell University), or from EDRS in microfiche for 83¢ or paper copy for $4.82 plus shipping.

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the industrialized world necessarily more valid than more simple techniques.

> As a rule, simplicity, honesty, and diversity should be stressed. . . . Diversity in method has been a little-used means of increasing the amount and quality of information. Wherever and whenever possible, a combination of the three approaches (asking questions, observing, and listening) should be used.[6]

The purpose of sociocultural data gathering, particularly at the local village level, is to get people to talk—not simply to answer arbitrary questions about predefined specific categories of information. The gathering of data about sociocultural factors and materials required by engineers and planners is an important part of the educational process for everyone involved. Not only do community members learn data-gathering techniques, but they also learn a great deal about their own community, its problems, and possible solutions. Through this process, engineers and other outsiders can get data on perceived and actual situations and on possible reactions to alternatives. This data gathering is probably the single most important phase for establishing a dialogue between community residents and development agency personnel and for stimulating community involvement, as researchers and researched seek to understand the human dimensions of their problems.

1. David Hughart, *Prospects for Traditional and Non-Conventional Energy Sources in Developing Countries,* World Bank Staff Working Paper No. 346 (Washington, D.C.: The World Bank, 1979).

2. Elizabeth Cecelski and Joy Dunkerley, *Energy Use in the Rural and Urban Household Sectors of Developing Countries: An Assessment* (Washington, D.C.: Resources for the Future, 1980), p. 27.

3. Anne Whyte, *Guidelines for Field Studies in Environmental Perception,* MAB Technical Notes (Paris: UNESCO, 1977).

4. Mary Elmendorf and P. Buckles, *Socio-Cultural Aspects of Water Supply and Excreta Disposal,* P.U. Report No. RES 15 (Washington, D.C.: The World Bank, 1978).

5. Dennis Wood, D. Brokensh, et al., *Fuelwood Use and Rural Community Fuelwood Programs* (Washington, D.C.: DEVRES, 1980).

6. Whyte, op cit.

This article was excerpted from a paper presented at the International Workshop on Energy Survey Methodologies, conducted by the National Academy of Sciences at Jekyll Island, Georgia, January 1980.

Mary Elmendorf, of Sarasota, Florida, is a consulting anthropologist who works out of Washington, D.C. Her primary area of research is among the Maya people of Yucatan.

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animators has been less of a success. An animator is basically one who uses group dynamics to motivate a group, and who encourages the group to innovate, to organize, and to initiate change. In many ways the production and use of media goes hand in hand with the work of the animators. The animators must possess the requisite skills, not only in interpersonal communication, but also in using basic media (handling an audiovisual, for example, or conducting a photo discussion), and in conducting surveys. Animators should also have a suitable background knowledge of social and political affairs.

ASTHA has been progressively reducing the number of its animators, trying to insure quality and to concentrate in depth in certain areas rather than spreading its resources too thin. In order to improve the quality of the animators, ASTHA sent several of them for a training course conducted by Nirmala Niketan College of Social Work, then ran a special workshop itself. Much of the experience gained in this process went into putting together an Animator's Kit, with sections on communications skills, media samples, and background papers. A revised Animator's Kit is now being produced.

At this point, ASTHA has come to realize the value of doing thorough research and evaluation of what it has produced. The plan is for the organization to invest a larger portion of its resources in such efforts, applying the lessons it learns to the improvement of its programs so that it can attain and maintain a high level of quality in all aspects of its work. ■

This article is excerpted from a report by Myron J. Pereira, director of ASTHA, in the September 1980 issue of Concern, *the news bulletin of the Adult Education Project, Xavier Institute of Communications, Mahapalika Marg, Bombay 400 001, India.*

Graphic Thoughts

by Lucille B. DeSantis and Dennis W. Pett

An effective exhibit is usually a combination of several media—real objects, models, handouts, and a person to answer questions. Basic to all exhibits, however, is a display that will attract attention. Two effective display techniques are the rope display and the pole display. Both are easy to construct and conveniently portable.

Rope displays are particularly simple to set up and can be very attractive. Ropes can be stretched from floor to ceiling, or rope loops can be hung from a tree branch or a pole frame out of doors. A pole inserted in the bottom of the loops holds them in place. Pictures, posters, handouts, or other materials can be fastened to the ropes with pins or string. (Figure 1)

Pole displays are particularly useful when a display must be moved frequently to new locations. If the display is not likely to be bumped, the poles can be free standing, but for stability the poles should be pushed into the ground. Display boards made of thin, lightweight plywood can be tied to the poles with rope. Inexpensive woven mats can be substituted for the plywood if the poles are stable. Materials can be attached to the plywood with tape or small nails, or to mats with pins or string. (Figure 2)

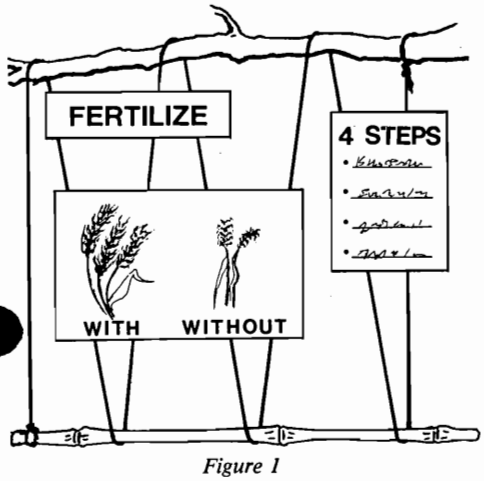

Figure 1

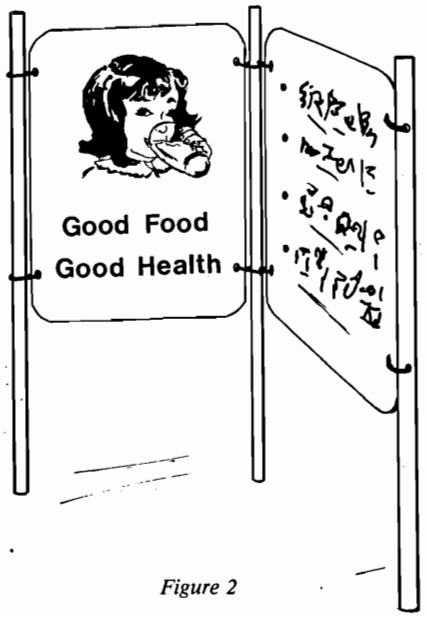

Figure 2

A few simple rules govern any display:

- Be certain your display is located in a place where it will be seen by your audience.
- Use eye-catching visuals that are familiar to, relevant to, and understood by your audience.
- Use few words and be certain they are simple and large enough to be read easily.

Lucille B. DeSantis is a media consultant with AudioVisual Resources, 19 Amherst Road, Berlin, New Jersey 08009, U.S.A. Dennis W. Pett is director of instructional services for the Audio-Visual Center, Indiana University, Bloomington, Indiana 47405, U.S.A.

Course on Communication Planning

Cornell University is offering again this year a three-week course on communication planning and strategy, designed especially for policy level officials in government and non-government agencies who have responsibility for programs in health, nutrition, and agriculture in rural development. The course emphasizes how to organize and mobilize communication resources in support of other program activities. Among the topics covered are communication planning, media selection, message design, evaluation, organizing communication units, and mobilizing communication resources.

Tuition for the course is U.S. $650.00, and housing and meal expenses will be approximately U.S. $650.00. Enrollment is limited to 30, and interested persons are urged to apply as soon as possible. A registration fee of U.S. $25.00 should be sent with the application. Those accepted in the program will be notified by cable, and course materials will be sent in advance. No fellowships are available from Cornell University for the course. Inquiries or applications should be addressed to Dr. Royal D. Colle, Director CPS-81, Department of Communication Arts, Cornell University, 640 Stewart Avenue, Ithaca, New York 14850, U.S.A.

Mobile Printing Press

A Micro Mobile Printing Unit — a printing press in a van — has been donated to UNESCO for use in producing rural newspapers in Kenya. The van, a gift from the International Federation of Newspaper Publishers, will be used to expand the rural press in Kericho district, northwest of Nairobi, and the Kwale district, near Mombasa.

When the van arrives in a village, members of its team talk with the local people and take photographs. Then the team processes the news and prints the newspaper, all within a few hours. In this way, the village has its own newspaper, complete with headlines and pictures, in a part of the world where newspapers are traditionally a big-city luxury.

The van is equipped with a new type of tabletop offset press, typewriters with various type faces, a printing plate-maker, a generator, and a mini-darkroom for developing, enlarging, and printing photographs. Permanent newspaper facilities are to be built later, following the van's pioneering work.

The van was designed by the Netherlands' Graphic Media Development Centre, and the UNESCO project to develop the rural press in Kenya is being carried out with funds provided by the Federal Republic of Germany.

(From *UNESCO Features,* as printed in *Development Forum,* July-August 1980)

Dilemmas in Country X: Candid Discussions about Failures

The editor invites readers of DCR to contribute "dilemmas"—descriptions of the problems they have encountered in their own projects that might contain useful lessons for other development workers. Authors, projects, and countries can go unnamed if the author so requests.

Charcoal making is a subject on which there is much controversy. On one hand, the process of turning wood into charcoal uses energy. On the other hand, charcoal may be a more energy-efficient fuel than wood because it is usually burned in stoves rather than open fireplaces. A more complete analysis also shows that there is an energy cost in transportation, and that, depending on the area and the mode of transportation, there is a point where the energy cost of transporting heavy and bulky wood from the wood source to the end user is greater than the energy cost of making charcoal at the site of the wood source. (Taken a step further, of course, there is a point at which the amount of energy used to transport the wood in whatever form would exceed the amount of energy produced by the fuel for the end user.)

A number of reports have stressed that, in areas where charcoal is made, improved techniques of charcoal production can reduce waste. Savings can be achieved not only through more complete use of trees, including sawdust and oddly shaped pieces of wood, but through more efficient techniques of charring the wood and through decreasing the number of accidents caused by kiln caveins and explosions.

If making charcoal more productively is to be an effective local project, however, it has to follow the rules for community development by starting with local participation from the beginning. In many parts of Africa, charcoal is made only by a specific group of people, working within longstanding organizational structures. These structures must be understood thoroughly before changes can be introduced productively.

One charcoal project designed to change local behavior in an African country aroused a great deal of antagonism and failed to gain local support. It was designed as a two-step experimental program. The first step was to develop a less wasteful charcoal technology. The second step was to form cooperatives of charcoal makers, reducing or eliminating the number of middlemen, and making sure the cooperatives would employ sound energy conservation techniques.

The project designer began his program, with the support of the forestry service, by:

1. issuing licenses to limit the number of charcoal middlemen who hire charcoal makers and who control the transport and sale of charcoal;
2. limiting the number of charcoal makers who can work under each middleman; and
3. restricting the area in which wood can be collected.

This cut down on the amount of wood being used to make charcoal; it also put several hundred local people out of work. The project director then re-hired a few of the charcoal makers to help in experimenting with old versus new techniques of making charcoal. The charcoal produced in these experiments was sold on the market at a subsidized price, thereby underselling the traditional vendors.

During the experiments, a technician designed a kiln that is not as expensive as many kilns, accommodates pieces of wood of various sizes, and makes charcoal more efficiently. The project director wrote an evaluation report stating that the technical stage of the project had been successfully completed, and that they were ready to start the second stage, that of disseminating the technology.

It is obvious that the designers of this project conducted no adequate study to help them understand the social realities of the project site. They had little or no understanding of the positive or negative roles of the middlemen, their relationship with charcoal makers, the traditional organization of the charcoal makers themselves, or the perceived need for a new technology. Charcoal makers had not felt the pressure of a limited wood supply until prohibitions on wood gathering were introduced in connection with the project, and then they perceived the limit as an arbitrarily imposed restriction on their economic freedom.

In terms of the technology, even if the new kiln design were cheaper than many others, the traditional way of making charcoal under a mound of clay involves no investment whatsoever and calls for no fixed equipment, thus charcoal can be made wherever wood is gathered.

Local residents discussing this project report that many middlemen and charcoal makers who were put out of work by the project's licensing procedure are angry at the project, and that several have started forest fires in the protected areas. Even those who have licenses are angered at having to compete against project-subsidized charcoal. Thus, although the technical aspects of the project may have seemed successful to the director, there was little community support for or participation in the project, the new technology had little connection to the social reality, and the likelihood of an overall positive outcome seems doubtful. ■

Marilyn Hoskins

Development Communication Report

Clearinghouse on Development Communication

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Cost-Effective Training Strategy at Field Level Strengthens Influence of Extension Agents in Community

by Philip Vincent

It will come as a surprise to no one in the field of development, and particularly development communications, that successful projects have the active support of the community in which they are based. Promotion of community support and involvement will call for different approaches, depending on cultural, ethnic, political, and human circumstances. Many examples of how success has been achieved can be found in the reports and documents of development agencies and universities. But what, if anything, are the common factors in these experiences?

Community-based projects may be defined those which could or should arise from the specific situation of a community and which relate directly or indirectly to that community's needs. Whether the project is derived by or with the people, or is generated by a political imperative to meet a generalized need, someone must be the arbiter of the project. He or she will dispense information, troubleshoot the inevitable problems, and interpret the progress for the managers. In most situations, the individual given this role is the extension agent of one ministry or another.

The field-based officers from any ministry are trained with a specific discipline in mind, such as agriculture, sanitation, or community development. Many countries include some teaching or outreach skills in the curricula of the institutes which train extension agents. The staff of the Project Support Communication (PSC) service of UNICEF's (United Nations Children's Fund) Eastern Africa Office reviewed the curricula in some of the training institutes in the region, and found that none made it a priority to teach trainees about interpersonal and group communications.

Clearly, development must be based on the struction and motivation of the rural and urban populations. An extension officer is the common denominator in most information transactions and he or she must be equipped with the necessary skills to understand the relationships within the community, to understand how to improve his or her own standing and influence, and to become a conduit to carry new ideas from the community to the government machinery.

Training Extension Agents

But how can such a cadre of extension agents be developed? Who can undertake the enormous task of retraining the field-based officers from each ministry? Will the governments be willing to adapt the curricula of their training institutions to ensure that the subsequent generations of officers will have these communications skills?

These rather daunting problems have been approached in the past by sending specialists overseas for training, in the hope that their new skills would "trickle down" to the field workers in their ministries. Because this has not happened, we in UNICEF PSC have tried a different approach.

From our experience, it seemed that a training program for development extension workers, derived *from* the stated needs and *for* the countries concerned, emphasizing the skills of interpersonal communication and using indigenous resources, would be a long-term solution to the chronic lack of trained people. The program now exists and is known as the UNICEF regional training program, "Communications for Social Development."

UNICEF Focus on Communications

For the past eight years UNICEF has progressively increased its funding support for the communications components of government programs. Beginning on an *ad hoc* basis with support to ministries producing support media, the emphasis has veered towards training in interpersonal communication techniques and simple media at the field level.

UNICEF's decision to move away from the more tangible and glamorous media ventures towards a pyramid of trainers and seminars was made on the basis of experiment and evaluation—and in response to increasing demand from the governments concerned.

During the mid-70's, when the Project Support Communication service in the Eastern Africa region of UNICEF was still deeply involved with the "curative" media interventions, a series of training programs was conducted to meet the specific needs of our programs. As the years slid by, the demand for training courses slowly built up.

The PSC unit's first course ran for two weeks in 1974 in Lusaka, and centered upon the communications needs of the squatter settlement upgrading program. A course was organized in 1976 for the northern countries of Eastern Africa, again for two weeks, but this time in Arusha, Tanzania.

In this issue . . .

A publication of the Clearinghouse on Development Communication
Supported by the Development Support Bureau of the U.S. Agency for International Development

(continued from page 1)

Training formalized

It was only in 1978 that an attempt to formalize the training was made. During the Arusha workshop, Donald Bogue of the Center for Family Studies in Chicago suggested that we pool resources and plan for a series of training courses in Africa. The first of these was held in Nairobi for nine weeks during early 1978. A follow-up to this course was held in Zomba, Malawi, during 1979 for four weeks.

Evaluations of these courses by the participants, mostly middle-level managers from government ministries, and reactions from their supervisors in the following years, led us to seek a lasting format for such courses. Many consultations with our collaborators in UNESCO (United Nations Educational, Scientific and Cultural Organization), IPPF (International Planned Parenthood Federation), and governments in the region led us to certain conclusions.

The mandate of UNICEF spells out our dedication to the betterment of the lives of mothers and children, but the logic of building a generalized project to train extension officers in all fields was difficult for our organization to accept. Although we feel that the training will eventually benefit all sectors of government, it will initially be directed toward field officers working in health, water supply, nutrition, and community development. Other sectors which impinge more upon agriculture and industry have a direct bearing upon the welfare of mothers and children over the longer term, and will be included eventually in the training activities.

The strategy

If anything had been learned from the years of "curative" media and training interventions by PSC into UNICEF-assisted programs, it was that at best such programs were only transitory and at worst they took so long to get into the field that little was achieved. Certainly replicability was not the buzzword of the day. A cadre of communications programmers was needed within the countries. People with media skills were always present, but their availability to the programs and the interventions which they supported were often severely limited in scope. Such institutions here in East Africa are usually quite well established, though they lack experienced staff, operational funds, and outreach capability in general. The training of such staff is not too great a problem; they number only in the hundreds for the whole of Africa.

But what about the man or woman who is already in the field? The studies on the effectiveness of the extension workers have shown that their contact with the population is close to nil. Yet extension workers are a body numbering tens of thousands who should be the greatest force for development after the people themselves. They are not being used and they must be converted into a positive asset if any significant changes in the developing countries are to be expected.

The tactics

The training strategy developed by UNICEF PSC is based upon experiences over the past six years. While it is not new, we think it is exciting. It involves a simple pyramid of resources, with trainers being trained at participating institutions throughout the region. The training centers usually serve three or four neighboring countries. Trainers return from these courses to their home countries to begin training others at two levels—inservice and preservice.

In establishing the program, regional consultations were held for trainees with principals and lecturers at government colleges. Designing the workshops posed a difficult task, as the program designers felt that any curriculum presented to the extension agents should be based as far as possible upon a relevant experiential, cultural, and practical base. In short, each country would have to be responsible for producing its own materials, working from general "modules" published at a central location—the tip of the training pyramid—and then adding local case studies and translating as necessary into the local languages. It was the two-stage development of the curriculum which, it was hoped, would lead to more relevant, effective, and stimulating courses of study. At last it might be possible to produce a program which reflected the priorities and concerns of each African community, rather than being a rehash of tired Western values.

The central resource unit

The resource center at the tip of the pyramid was conceived not as a command post but as the logical way to provide support services at a reasonable cost. These services, it seemed to us, involved providing core curricula, resource materials, and administrative and financial advice. The focal point of the pyramid would continue to serve the needs of the institutions in the participating countries, collecting experiences and suggestions, and sharing materials and resources which might seem pertinent to the other participants.

The Institute of Adult Studies (IAS) at the University of Nairobi has been selected to be this focal point. It is being supported by UNICEF for a period of three and a half years with an international coordinator, secretarial assistance, a local counterpart, equipment, and funds for the production and distribution of core materials.

Participating institutions, such as the Institute of Development Studies in Lesotho and Botswana, the Educational Mass Media Center in Ethiopia, and the Center for Applied Social Sciences in Zimbabwe, have assisted with the specifications and design of the project. They will be supported by the project to conduct the initial training courses for trainers. The countries themselves will be given funds to run a small number of courses at the field level for extension agents. In charge of these in-country courses will [illegible] national coordinator trained at a sp[illegible] course by the IAS in Nairobi.

Funding

The actual size of the UNICEF involvement is minute when viewed in the context of the objectives it sets for itself. It is hoped that UNICEF will fund the program through 1984, at a cost of $600,000. But the project must not stop there. If it serves as vital a need as we believe, and gets the job of training done efficiently and effectively, then government funds should continue to flow after the UNICEF aid tapers off.

The program addresses itself to a fundamental need, willingly stated by the representatives of the participating countries, but a need which is usually relegated to a low priority due to its magnitude, the expense of conventional training, and its cross-sectoral nature. The aim of the UNICEF intervention is therefore threefold. First, it must demonstrate that an economically viable training scheme can reach down to field level. Second, it must show how a lasting system of training can be built upon local resources with only minimal external support. Third, to insure that the program continues after the end of UNICEF funding, it must make [illegible] the economic benefits accruing from a be[illegible]-trained and more effective extension field force. In years to come, when the budgets of governments are sure to become tighter and tighter, the competition for funds will intensify, and only those programs demonstrating real benefits will get an adequate share.

(continued on page 14)

How Readers Can Further the CDC Network

- Send us information about your projects—your experiences are valuable to your counterparts in other countries.
- Send us regular copies of your publications, papers, and reports. These help strengthen the development communication network worldwide, and they will be useful to visitors who use the Clearinghouse collection when planning development projects.
- Write articles for publication in *DCR*.
- If you are in Washington, visit and u[illegible] the Clearinghouse. Such visits help us to stay in touch with what is happening in the field.

Introducing. . . International Development Communication Logos

With this issue, *Development Communication Report* inaugurates the set of logos recently created for the Clearinghouse on Development Communication by Washington designer Timothy Bradford Ward. We invite the international development community to adopt these symbols for its own graphics needs.

The new symbols will appear in each issue of *DCR* to make it easier for readers to scan the newsletter to get an idea of the content of the articles. We have chosen to have logos to illustrate the main developmental sectors which we cover in the newsletter, and have designed logos to represent certain media as well. While it is clearly impossible to have symbols for every area, we may in the future create additional ones as the need arises.

Logos, visual symbols representing ideas or concepts, jump out from a page. They make a statement and introduce a topic graphically, a kind of visual shorthand. Logos not only enliven a page of text, but they can guide readers quickly to subjects of special interest to them.

Readers of *DCR* who visit the Clearinghouse collection in Washington, D.C., will recognize the symbols on the library shelves, where we will be using them to designate books by subject and sector. With the new symbols, visitors will be able to locate materials easily in their particular areas of interest. We will also be using the logos in appropriate Clearinghouse publications, such as the new collections of *Project Profiles* to be published soon.

Agriculture 

Audiocassette 

Cinema and Motion Picture 

Education and Human Resources 

Filmstrips and 35mm 

Folk Media 

Health 

Information 

Integrated Development 

Interpersonal Communication 

New Technologies 

Nutrition 

Population and Family Planning 

Print Media 

Radio 

Satellite 

TV/VTR 

Women In Development 

The challenge for the designer was to create clear visual statements for all these categories. The designs had to be simple enough to look well when reduced to the size used here. They had to be equally applicable to all countries and all cultures, and had to have a common format so they would complement each other when used together. Some of the final designs are pictorially representative, such as the Health logo, while others, such as the New Technologies logo, are more abstract, suggesting an idea or a theme rather than an object.

DCR and the Clearinghouse will welcome reactions and comments from readers about the new logos and their intended use in the newsletter. The Clearinghouse and the designer invite readers to use the logos freely. If readers feel these symbols would be useful in their own publications or in other visual materials, we are glad to make them available. We do request that users notify the editor of *DCR,* and if possible send us a copy of the publication where the logos appear.

Folk Poetry in Bangladesh:
Updating Traditional Forms To Carry Timely Messages

by Rati Ranjan Roy

Development communication is a process of exhange. It is a process of motivation and confidence building, of stimulating creativity and self-expression, of sharing information, ideas, and experience to be translated into actions leading to socioeconomic and cultural development. Many factors, such as community attitudes, norms, and values on the one hand, and media attitudes on the other, greatly influence the communication process. For instance, a message is not accepted by a particular audience if it contradicts the value-system of the recipients. At the village level, appropriate media aids such as posters, cut-outs, and folk poetry have a vital role to play in the communication process. This article will discuss the role and impact of folk media, especially folk poetry, as a communication aid for social change.

Bangladesh culture, like all cultures, has its own folk traditions to communicate messages. Folk media have been popular since ancient times, and include poetry, songs, drama, music, proverbs, and stories, all of which have been used in different times for different purposes. During the British Colonial period, folk media were used to strengthen and establish colonial power. Later, folk media were used to organize the Indian people against colonial power. In all ages, the folk tradition was found to be an effective way to communicate specific messages. However, many of the folk poems had little relevance to the lives of the very poor rural people, for few poems reflected the low status and condition of the downtrodden classes. The poems were mainly political or recreational, not didactic.

New Folk Poems Created

However, recently folk media in the form of poems have been created and used in different areas of Bangladesh as training and communication aids, successfully supporting many development efforts. One of the major advantages of these poems is that they have always been highly accepted in the community. The rhyme and rhythm of these newly created folk poems are traditional, but their content and purposes are put to new uses. Another advantage of the poems is that folk media are appropriate for gatherings of any size. Folk media involve the audience emotionally and intellectually as well as physically. The audience can easily add their voices to the recitation of folk poetry or take part in the drama. Again, the poetry is composed and designed so that it imitates the literature of rural people themselves. Thus, it speaks of their own needs, problems, and resources. The contents, humour, and satire are very easily understood, and appeal to the audience. It is found that once such poetry is introduced to any community, it becomes so popular that people begin to recreate it by themselves in different group situations, such as in their working situation in the field, during leisure time, etc.

One of the other important advantages of using folk media as a development tool is that the community people themselves have their own resource persons to compose and recite the poetry. And once these aids are used in any community, that begins a process by which the message spreads throughout the community by word of mouth.

But the effectiveness of folk poetry, like the effectiveness of any media message, depends primarily on how well the poems are designed. There are a variety of ways to design and use these poems, and they vary with the situation, the purpose, and the audience.

Subjective and Objective

Designs may be either subjective or objective. Subjective poems mirror the reality of the audience, and may cover a wide range of subjects such as success or failure, health and sanitation, existing agricultural conditions, and available community resources. Thus the poem describes the existing socioeconomic and cultural conditions of the audience. Subjective poetry is very effective for motivating, building confidence, and raising the self-image of the target group. It also starts a dialogue in the community, encouraging people to analyse their own conditions, compare their conditions with others, and seek solutions.

In the case of objective poetry, poems are based on general situations unfamiliar to the villagers. They may be drawn from the experiences, real or imaginary, of the writer, or from information collected from a variety of cases. They are mainly used to represent *others'* situations, success, and experiences to the audience. These are an effective way of giving options to a group on the basis of which the people can decide about their own situation. But whether the medium is subjective or objective, it has a far-reaching effect, and the messages it carries spread from community to community and village to village.

The contemporary folk poetry being written with development information or messages in Bangladesh takes four different forms: folk poems, folk songs, drama, and rhythmic stories. These differ more in terms of process than in content.

Growing Use of Folk Poetry

Whatever forms folk poetry takes, it constitutes a part of the literature, and literature has a great influence on people. As folk poetry is easily understood and is spoken in the languages of the rural people, it can give audiences tremendous incentive to change their attitudes, values, and practices. In Bangladesh, the uses of folk poetry in development communication are becoming increasingly popular both in voluntary and in government programs. At the government level, folk poetry is being used on a large scale for the self-reliance movement, for the literacy campaign, and for family planning programs. At the same time, voluntary organizations are increasing their use of folk poetry to provide messages to the community aimed at increasing motivation, raising awareness, building up confidence, and encouraging upward mobility. The effectiveness of the medium is indicated by the popular acceptance of the new folk poetry, and its increasing use as a communication aid by development communicators. ■

Rati Ranjan Roy is the Coordinator of the Information Service, Village Education Resource Center, in Anandapur, Bangladesh.

Poster Offered

The Clearinghouse on Development Communication is making available to readers of *DCR* an attractive wall poster.

The poster was created to illustrate one of the main ideas of development communication—that radio can lessen isolation and encourage economic development for the rural poor. Symbolizing radio's reach to remote parts of the world, the poster shows a small village isolated among the clouds. The text consists of short descriptive illustrations in English, Spanish, French, and Arabic, making the poster appropriate for many international settings.

The colored poster is available free to subscribers of *DCR* in developing countries. Others wishing to obtain the poster should send U.S. $3.00 to cover mailing and handling costs. Please send requests to: Poster, Clearinghouse on Development Communication, 1414 22nd Street N.W., Washington, D.C. 200037 USA.

Slow-Scan: Long-Distance Pictures By Phone

by Patricia Nettles

One of the technologies emerging to serve developing areas is slow-scan television, a technique that makes picture communication possible over inexpensive audio channels such as the telephone. Slow-scan also works with satellite, FM radio, and microwave channels. Appropriate applications of slow-scan technology include telemedicine, teaching, and conferencing—in short, any communication that may benefit from or require the use of still pictures. A look at some current applications will show the advantages and limitations of slow-scan TV.

The basic technology is simple in theory. Since a TV picture is a grid of lines composed of points, and each point has a voltage representing its brightness, engineers designed a means to pull the picture apart and identify each point by its position and value. This can reduce the complex "wideband" TV signal to a fraction of its normal size, allowing it to fit audio channels. At the place where the signal is received, a "memory" unit puts the picture together again. It is rather like cutting a piece of paper into numbered strips and passing them through a keyhole for reconstruction and viewing on the other side.

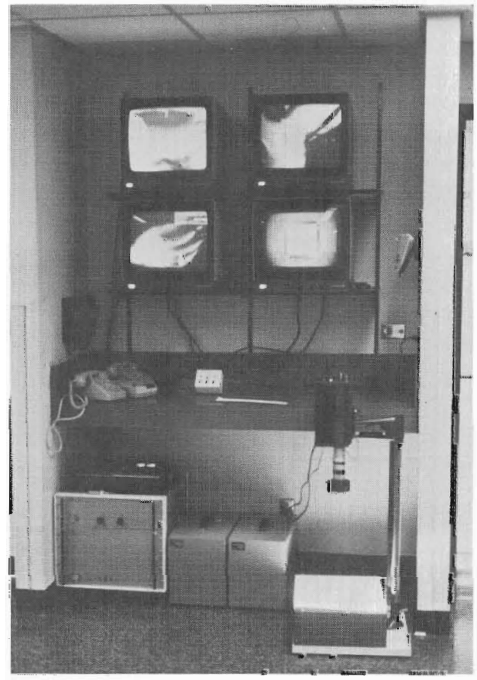
Transmission time for a single image varies from 4 to 78 seconds (compared to 25 or 30 pictures per second for normal TV), depending on the channel used and the detail required in the picture. Greater detail needs to be sent at high resolution, which takes longer to process.

Communicating visually requires a few basic skills, such as focusing a camera, reading instructions, and dialing a telephone. More than that, however, it requires user acceptance. Even though some people are intimidated by technology, use of slow-scan increases where the system remains in place more than a year.

Advantages of slow-scan

There are obvious advantages to communicating visually across long distances. Pictures transcend barriers of syntax and vocabulary, lessening the chances of misunderstanding. Many kinds of information may best be shared in picture form; for instance, medical images—X-rays, EKGs, etc. Anything a TV camera can see is an appropriate subject for slow-scan communication, particularly charts, models, photographs, slides, microscopic images, or pictures of people and places.

Printed text can also be read via slow-scan, but special considerations must be observed, such as picture resolution and the size of the TV screen and the print. Because of the shape of a TV monitor, it is usually best to transmit a half page at a time. Slow-scan has been used by several federal libraries for "telebrowsing." A patron at one library may want an article that is part of another collection elsewhere. Slow-scan is used to search quickly through files and identify what is needed. A copy can then be sent by conventional or electronic mail.



Compact two-way slow-scan station at Sunnybrook Hospital, Toronto, Canada.

Slow-scan for health care

The first extensive use of slow-scan in a remote area was made by the Toronto Telemedicine Project, which began in 1978. Slow-scan technology helped to improve health care delivery to the 10,000 people living in northern Ontario's Sioux Lookout Zone, a rugged area of 100,000 square miles. The Zone has one hospital and is served by two teaching hospitals in Toronto: Sunnybrook and Sick Children's. After the installation of telephone service in the Zone made a slow-scan network possible, two-way systems were placed in the health stations at five of the larger villages and at the three hospitals. The service is still active and has been extended from diagnosis to training and human relations.

The Zone is a wilderness area accessible primarily by airplane. Patients were routinely flown to a hospital if their health care needs could not be met by the local nurse or aide. This procedure was risky, expensive, and stressful. The primary purpose of slow-scan was to extend diagnostic expertise and reduce the need for patient transfer. The secondary objective was to provide continuing medical education to the health station personnel in the villages and upgrade the training of those doctors and nurses scheduled to work in the Zone. Both of these goals have been met satisfactorily. Picture transfer has helped reduce the cost and risk of patient travel. Continuing education now includes patient training. One woman, for example, needed several months of physical therapy, yet longed to go home to her family. The therapist used the slow-scan to record picture/sound instructions on an audio cassette so the woman's family and her nurse at home could continue her treatments, using the slow-scan facilities in her village to play back the instructions.

One of the disadvantages of slow-scan is the necessity of an existing audio link to carry the images. Another is the dependence on the quality of that link. In Wisconsin, where the 600 residents of Washington Island get their health care from a nurse and a slow-scan phone link to a mainland clinic, storms interfere with audio reception occasionally, cutting the contact. The line itself must meet certain quality standards to keep a "clean" picture. However, there is flexibility in the type of channel that can be used.

Slow-scan in the Pacific

At the University of the South Pacific at Suva, Fiji, the ATS-1 satellite has made a network of communications possible (USPNET) since 1972, and slow-scan was recently added to that network. USPNET extends the University from Fiji to other islands throughout the Pacific, and the increased demand has led to upgraded and expanded communications. Radio, video, computer, and slow-scan terminals were initiated in 1978. Now satellite tutorials serve the region regularly, offering courses that include agriculture, accounting, politics, English, and mathematics. Inservice training, consultations, and administrative conferences are also held through the satellite program. Slow-scan TV terminals in Tonga, Fiji, and Western Samoa transmit pictures on the satellite's audio channel at a scan rate of approximately 40 seconds per medium resolution picture, 80 seconds for high resolution.

(continued on page 12)

There is so much to learn about the use of information to aid economic and social development, and so little margin for error or waste in the developing countries, that it is both moral and prudent to share what is found out.

—Wilbur Schramm

New to Note

Readers who are involved in educational activities should look into UNESCO's International Bureau of Education's "Ibedata" publications. Among these is a *Terminology of Technical and Vocational Education/Terminologie de l'enseignement technique et professionnel.* A most useful English-French-English glossary of both general and specific (training) terms relating to education, this small (88 pp) volume gives a concise definition of each term and includes its bilingual counterpart.

Although the terms are chosen and defined with an emphasis on the perceptions of Western education systems, the careful breakdown of terms into such categories as "Terms relating to systems and structures of education," "Terms relating to training," or "Terms relating to employment," clearly makes this publication a valuable addition to the growing body of information that aims to ensure consistency of meaning in professional communication.

Directories are always welcome, and Ibedata's *Directory of Educational Research Institutions/Repertoire des institutions de recherche en education/Repertorio de Instituciones de Investigaciones Educacionales* will fill many a research and reference need. Compiled from answers to a UNESCO questionnaire, the information lists kinds and objectives of educational research, staff size, publications, etc. As the compilers note, arbitrary decisions had to be made with regard to the concept of research, areas of discipline, and choice, so as not to weight the *Directory* too heavily toward those nations with a multitude of research institutions. The purpose of this—as of any good international directory—is to put people of similar interests and needs in touch with one another.

In a final note, the International Bureau of Education is to be commended for having designed a particularly handsome format and cover for this series!

In the U.S., the Terminology *is available for U.S. $4, and the* Directory *for U.S. $12.50 from Unipub, 345 Park Ave. South, New York, NY 10010; others may apply to national distributors of UNESCO publications or to Commercial Services, UNESCO, 7 Place de Fontenoy, 75700 Paris, France.*

Reviewed by Judy Brace

VTR Leads Variety of Media Techniques Used In Tanzanian Training for Rural Development

by William Le Clere

In many Western countries the use of media in support of training has been accepted practice for a decade or more, but, for a variety of reasons, the matching of media and training has been less common in developing countries. In the past two years, training staff on the Training for Rural Development Project—Tanzania, has introduced a mixture of media techniques in support of a variety of training and adult education efforts in four regions in that East African country.

From the beginning of the project in late 1979, experimentation with media-support of training was part of the project design. One part of the project strategy has been to introduce Tanzanian trainers to a variety of media techniques, and to encourage them to decide which are appropriate and how to apply them in rural development programs. It is helpful to have a brief overview of the project before looking at the results of specific applications of video technology.

Training for Rural Development—Tanzania

The Training for Rural Development Project is funded by the United States Agency for International Development (USAID)/Tanzania. It was designed and requested by the Tanzanian Ministry of Agriculture, the Ministry of Manpower Development, and the Prime Minister's Office in cooperation with USAID and USDA (United States Department of Agriculture). The overall goal is to use training as a major tool to improve the quality of life for rural Tanzanians, who comprise more than 90 percent of the country's population. The training project is in the context of several other major social and governmental change programs, all designed to help achieve the same overall goal. American staff include Janet Poley, USDA/USAID Project Advisor; Frank Fender, USDA Agricultural Economist; Kathleen Alison, USDA Audiovisual Specialist.

Adult education methods, as defined by Malcolm Knowles and others, and media support are the principal training technologies being introduced. Training content includes community organizing and development, project management, increased agricultural production, home economics, livestock breeding, and general community health. The project is designed to begin at the village level with continuing cycles of needs assessment. Training based on assessment continues both in the villages and in residential training centers located in the regions. In the next phase of the project, needs assessment, training, re-assessment and continued training will work its way up the system to the district, regional, and eventually national levels.

As of this writing, training has begun in sixteen villages, four in each of the four pilot regions, and needs assessment is underway in the districts and regions which affect these villages. Ten Tanzanian trainers were trained in adult education methods and project management in 1980, and twenty-four more Tanzanians are being trained in 1981. Another 60 Tanzanian trainers are in formal degree programs across the U.S. The Tanzanian training teams are all experienced in village work, and have had previous formal training and experience in the content areas in which they will train.

In the project to date, there have been four different training situations where some form of media have been used in support of training: training of trainers, village training, residential training, and orientation and outreach.

Training of Trainers

By design, two of the first ten Tanzanian trainers were already experienced in some media applications. Specifically, both were trained as commercial artists, but both also had good mechanical aptitude. This first Tanzanian team was given three months of intensive training in the U.S. in adult education methods and project management, and the two media specialists went through 90 percent of that training with their colleagues. In the other 10 percent of their time in the U.S., the media specialists were trained in the operation and basic maintenance of VTR (video-playback) systems, audiotape units, overheads, and movie projector. They learned uses of slidetapes, photography, and simple flipchart pictorial presentations.

During the training of the full Tanzanian team, the American trainers used video-playback extensively, so that all of the team had some exposure to that technique. All practice training presentations were videotaped and played back to help the trainers see and hear themselves trying out new methods and techniques. The other trainers also used their media specialist colleagues to help prepare visual aid flipcharts used during their practice training.

During the training of the second, larger Tanzanian team, similar techniques were used. In addition, a stop-action videotape was used in training trainers to choose which interventions to use when confronted by a

particular situation in a training group. In this exercise, the taped presentation began by showing several problems in getting a workshop started. At the point where the trainers on film had to make an intervention decision, the tape stopped, and the leader asked what the observer would do in this situation. Tanzanian trainers then discussed and explored various options, trying out a few which were also videotaped. The program resumed and the videotape showed three different interventions which could have been appropriate for that situation. Tanzanian trainers then critiqued their own and the programmed interventions. The plot on tape thickened, situations becoming increasingly complex, and trainers had to demonstrate increased skill and creativity in risking interventions.

By the conclusion of intensive trainer training, at the very least, the uses and applications of videotape media and mixtures with other media had been de-mystified, and most trainers reported they were anxious to find ways to experiment with the new media back in Tanzania.

Village Training Design

After the trainers conducted a needs assessment in each village, the team designed approximately two weeks of training tailored to that village's needs. The first training events were focused on the village council, since that is the local governing unit in the village, but training was not necessarily limited to council members. The size of the average training group was about 28 villagers. Since all were also farmers, homemakers, or shopkeepers, the training day was typically three hours long, scheduled at the convenience of the villagers. Swahili is the national language of Tanzania and all the village training is done in Swahili. However, although Tanzania has made tremendous progress toward universal literacy, some council members, including some of the oldest and most respected, did not read Swahili well. As a consequence, the first use of media support the trainers designed was a pictorial presentation of the four main goals of the training. They presented the goals orally, pictorially, and in written Swahili. This opening training sequence accomplished several complementary ends:

- it heightened understanding of all villagers participating
- it showed respect for the many who could read written Swahili
- it facilitated oral questions and answers between trainers and villagers
- it protected the dignity of those who could not read, encouraging their continued participation in the training.

In the 16 villages in which training has begun, there has been little to no observable drop-out among villagers. On the contrary,

(continued on page 14)

On File at ERIC

The use of educational technology, teacher training programs, and curriculum change are the focus of reports reviewed in this column. All are available in microfiche from the ERIC Document Reproduction Service (EDRS), P.O. Box 190, Arlington, Virginia 22210, USA. Most of them are also available in paper copy.

- McAnany, Emile G. ***Success or Failure of Communication Technology in the Third World: By What Criteria Shall We Judge?*** Paper prepared for the conference on Economic Analysis for Educational Technology Decisions, Dijon, France, June 19-23, 1978, 23 pp. (ED 192 713)

The successful application of communications or educational technology in developing nations is dependent upon a favorable mix of planning factors in the context of local settings, according to McAnany. He advocates the adoption of planning strategies to search for those contexts that promise the best results from a rationally planned application of technology, thereby avoiding the planner's often irrational hope that technology can overcome the major social problems faced by a society rather than serving as a useful tool for societies that have already attacked these problems. An examination of recent technology projects in developing nations yields several internal and external factors that seem to be the most likely to affect project success: (a) criteria for successes are based on an implicit or explicit set of values; (b) judgement has been too restricted to internal efficiency standards in the past; (c) contextual factors have largely been ignored; (d) equity as a criterion for success imposes its own criteria; and (e) a mix of contextual and planning factors is required. A bibliography of 27 references is provided. Available from EDRS in microfiche for 91¢ or in paper copy for $2.00 plus postage.

- ***International Conference on Teaching-Learning Process in Universities. A Fresh Look into the Teaching-Learning Process and Use of Educational Technology in Universities with Special Reference to ASEAN Countries.*** Penang, Malaysia: University of Science, 1979, 264 pp. (ED 192 631)

This document provides background information for a conference held in Penang in June 1979, as well as transcripts of the opening and closing sessions, papers presented, a conference program, summary of discussions, findings and recommendations, and lists of committees and participants. The papers are divided into four sections: (a) goals and objectives of university education in developing countries, and specifically Asia; (b) characteristics and learning problems of college students in Malaysia, Indonesia, Singapore, the Philippines, and Thailand; (c) instructional problems and methods of overcoming them (includes several case studies); and (d) supportive infrastructure, academic staff training, and the use of educational technology for developing effective teaching-learning methods. Available from EDRS in microfiche for 91¢ or in paper copy of $18.50 plus postage.

- ***Policy Studies in Asia—the Training of Educational Personnel: India, Nepal, Pakistan, Philippines, Thailand.*** Bangkok, Thailand: United Nations Educational, Scientific, and Cultural Organization, Regional Office for Education in Asia and Oceania, 1979, 102 pp. (ED 191 798)

Five study papers by educators from India, Nepal, Pakistan, the Philippines, and Thailand discuss the educational programs in their countries with special reference to policies and strategies in the implementation of universal education, current policies and strategies in the preparation of teachers, and recommendations for the preparation of teachers for the universalization of education. Programs described are both formal courses in central universities and nonformal strategies, including correspondence-cum-contact, radio, self-instructional materials followed by a contact session, and inservice courses or short courses at training centers in remote areas. This collection of papers is introduced by an overview which provides a synoptic view of the similarities and differences in policies and strategies in the five countries. Available from EDRS in microfiche for 91¢ plus postage; paper copy is available from UNIPUB, Box 433, Murray Hill Station, New York, New York 10016, USA.

- Shaker, Paul. ***Curriculum Change in the Developing Country: The Case of Saudi Arabia.*** Paper presented at the annual meeting of the American Educational Research Association, Boston, Massachusetts, April 7-11, 1980, 19 pp. (ED 191 139)

In this paper based on current thought in multicultural education, Shaker discusses the need for Americans to help Saudi Arabia integrate Western technology into education without subjecting the country to cultural imperialism, and cites four curriculum development efforts in Saudi Arabia. These projects were concerned with vocational education, computer-assisted instruction, intermediate reading materials, and political and social life. Shaker sees a valid multicultural road to educational development that can benefit all parties concerned and denigrate none of them. Available from EDRS in microfiche for 91¢ or in paper copy for $2.00 plus postage.

Barbara B. Minor, Publications Coordinator, ERIC Clearinghouse on Information Resources, School of Education, Syracuse University, Syracuse, New York 13210, USA

A Communicator's Checklist

1 *Economics of New Educational Media,* Vol. 1: *Educational Methods and Techniques* (1977) and Vol. 2: *Cost and Effectiveness* (1980). (Paris: UNESCO)

UNESCO has been at the forefront of the movement to explore ways in which new instructional technologies can be used to assist the educational systems of developing societies to expand rapidly, maintain and upgrade quality, and stay within available resource constraints. These two volumes are the product of three conferences that were held on the economics of these technologies, the first in 1975 and the follow-up conferences in 1977 and 1978. As such, they reflect a serious effort to address comprehensively a burgeoning number of economic evaluations of instructional technologies and to standardize the terminology, conceptual framework, and measurements to make cost-effectiveness comparisons of instructional technologies comparable across countries and applications.

The importance of the two publications is enhanced by the present dearth of literature on evaluation methodologies in the economics of instructional technologies. With the exception of the work of Dean Jamison, Steve Klees, and Stuart Wells, there has been little attempt to generalize the methodological tools and apply them to instructional television, radio, distance learning, and computer-assisted approaches in a large number of diverse settings. These volumes contain both methodological discussions and specific case studies that increase substantially the materials available to economists, planners, policy-makers, and educators.

Volume 1 contains two short methodological studies by J. C. Eicher and F. Orivel on cost analyses of educational technologies as well as a directory of pertinent institutions and experts, an extensive bibliography, abstracts of studies, and selected case studies on instructional radio and television and other applications. There is also a set of conclusions of international experts who participated in the 1975 meeting on establishing an information exchange on technical and economic studies related to educational technology, and there is a glossary of technical and economic terms.

Volume 2 contains seven papers on various methodological issues and applications with respect to cost-effectiveness analysis of instructional technologies as well as five case studies. These are followed by shorter discussions and abstracts as well as summary reports of the 1977 and 1978 meetings. Space limitations prevent a detailed discussion of each contribution, but it is possible to provide an overview of both the strengths and weaknesses of the two volumes.

All conference publications are vulnerable to a certain amount of disorganization, and these did not escape that fate. Without the resolute hand of a determined editor, there is no coordinated and articulated design, and the papers do not seem to have benefitted from an editorial review that would have improved the presentations, corrected errors of fact and interpretation, and minimized overlap among them. On the other side of the ledger, the diversity of the subjects and presentations is impressive, and certainly cannot be found in any other single source.

A list of specific strengths would be substantial. In addition to the diversity, there is a useful balance between conceptual issues and case studies. The conference discussions are extremely informative, and the authors represent a "who's who" in the field. These include such notables as Eicher, Orivel, Jamison, Klees, Wells, Tuckman, McAnany, and Wagner. Most impressive is the fact that the presentations are hardly one-sided as is the bulk of published work on instructional technologies. The tendencies for previous literature to seriously understate costs and overstate effects are discussed with great candor in many of the papers and in the conference discussions.

Weaknesses include lack of cohesion, repetition, and a remarkably poor translation. I was unable to obtain the French edition, but it appears that many of the translations were too literal. For example, on page 24 of Volume 1 we are told that "there are two very cogent reasons for making shift with a cost-benefit analysis . . ." (Of course, we should not blame the translators in the event that the original material was lacking.)

More serious are occasional errors of fact or interpretation. For example, Eicher states in Volume 1 (p. 19) that charging a rate of interest on the undepreciated capital cost is unnecessary because we are only comparing the relative costs and effects of different alternatives. Therefore, he argues that in eliminating the interest calculation, we will not bias the comparison. Of course, this is certainly incorrect when different alternatives are characterized by different relative intensities of capital. Unfortunately, this error is repeated by Orivel in Volume 2 (p. 24).

While such errors are hardly formidable, the economic glossary seems to have been deliberately sabotaged. Otherwise, how can one explain the fact that almost every entry is either obfuscated, misleading, or absolutely incorrect? For example, we are told that *present value* is "cost measured in current monetary units;" and *discount* is an "operat[illegible] consisting of reducing the apparent value of a future receipt or payment by a certain percentage in order to take account of foreseeable depreciation." Other entries are equally inventive or illusory.

These two volumes are important. They should be standard library contents for those planners, economists, and educators who must evaluate or interpret evaluations of educational technologies. They are an important reference work, although the non-expert should be certain to rely upon other sources and on other expertise before acting on the findings and recommendations. By all means, do not refer to the glossary. ■

Reviewed by Henry M. Levin, Director of the Institute for Research on Educational Finance and Governance, School of Education, Stanford University.

2 *The Primary Health Worker. Working Guide, Guidelines For Training, Guidelines For Adaptation,* Revised edition. (Geneva, World Health Organization, 1980), 346 pp. In English; illustrated. (French edition in preparation)

Since the World Health Organization (WHO) adopted the goal "Health for all by the year 2000" at its 1978 Alma-Ata conference, debate has raged about whether or not it is possible for the member nations to provide health coverage to their entire populations. At present, few even attempt to do so; the enormity of the task facing some less-developed countries is overwhelming. It seems appropriate, therefore, that WHO present some practical guidelines about how the goal can be reached, given the extreme economic and technological limitations with which some governments struggle. *The Primary Health Worker* (revised edition, WHO, 1980) serves exactly that function.

The health problems faced by most of the world are not mysterious and do not require high-technology solutions. Ignorance, superstition, inadequate water supplies, poor sanitation, and malnutrition allow communicable diseases to take an enormous health toll in less-developed countries, especially among the two most vulnerable groups: women and children. The unavailability of even minimal curative services means that minor problems can deteriorate into major disabilities or sometimes death. In *The Primary Health Worker* WHO outlines in detail how a barely educated villager can attack 34 common priority health problems to dramatically improve his or her community's health. In addi-

tion, the book gives practical suggestions about how to train a villager for this role, stressing throughout that both content and teaching methods must be adapted to meet *local* needs. The final section of the book, aimed at health planners, contains guidelines for making the necessary adaptations.

This extremely valuable book has evolved from a 1974 WHO working document which was field tested, revised, and published as an "experimental edition" in 1977. Further testing and revisions have led to the current volume. Those who have worked with the earlier versions (myself included) can attest to its practicality and usefulness. It is written in a clear, simple style, well organized, and illustrated with easily intelligible drawings. After appropriate adaptation and translation, The "Working Guide" (the bulk of the book) can serve as a textbook for primary health worker training and as a reference book for use in the field. The authors' admonitions about adaptation must be heeded, however; the guide can only be used after investing considerable time and talent to modify the content according to local needs and conditions. The guide in its present form is intended for those planning and implementing a primary health care program. It should save them a great deal of work as they prepare their own country's manual for primary health workers. ■

Available from WHO, Distribution and Sales Service, 1211 Geneva 27, Switzerland; or from local WHO sales agents or booksellers. Cost Sw.fr.12. Special terms available for developing countries.

Reviewed by Susan Colgate, Ph.D., a nurse-midwife who has taught Maternal-Child Health at the University of Yaounde in Cameroon, and worked as a traveling public health nurse in Niger.

3

Illustrations for Development, McBean, G., Kaggwa, N., and Bugembe, J., editors. (Nairobi: Afrolit Society, 1980), 69 pp.

The question of visual communications for rural audiences has, in recent years, received growing attention from the international development communications community. The Ford Foundation recently completed a comprehensive review of population communications projects in which visual, non-verbal information was provided to rural audiences. The Population Reference Bureau is continuing the Foundation's work in the field and is in the process of editing material which will review 12 of the most significant population communications projects worldwide that have successfully used pictorial communications for illiterate and semi-literate audiences. AID recently published a critical review of the use of both *fotonovelas* and comic books in development communications, focusing on the particular perceptual patterns and needs of illiterate and semi-literate audiences, and PIACT (Program for the Introduction and Adaptation of Contraceptive Technology) of Mexico City continues both its research and development work in the field.

The work of these organizations indicates quite clearly and conclusively that: 1) audiences having no familiarity with information presented two-dimensionally have extreme difficulty understanding graphic images; 2) the closer such graphic images are to being exact representations of reality the better understood they are; 3) the photo without background is the most exact and least distracting, and therefore is the most easily understood; and 4) most attempts to represent reality with drawings fail with media-naive audiences; only the most graphically accurate are understood.

Against this background, the role of the artist in visual communications for rural, semi-literate audiences is still a limited one. Few artists—even with good training and professional guides—will be able to serve the perceptual needs of those populations who have little contact with graphic media. The artist's role, however, becomes increasingly important as the media-awareness of audiences grows.

Illustrations for Development represents an effort to educate the development communications artist in the ways of visual communications for rural, largely illiterate populations in media-scarce environments. It provides a discussion of the perceptual patterns of illiterates (and semi-literates), the types of graphic images that have worked in the past for these audiences, and recommendations for successful new graphic attempts. More important, it tells the artist how to draw better: it is a short course in social/commercial art. In addition, it outlines the steps that must be taken to insure relevant and appropriate communications: audience research, pretesting, and formative evaluation, and cites the role of the creative team—of which the artist is an integral part—in successful education programming.

The book succeeds best in situating the artist in the process of graphic, pictorial communications and in providing practical information on how to improve technical skills. It is therefore useful not only to the artist, but to the local project or program director responsible for the production of graphic material. Far too few such directors appreciate the necessity of an accurate appraisal of audience needs and perceptions.

The book, however, is less than successful in a number of areas. First, although it rightly and correctly identifies necessary steps in the communications process (i.e., audience research, pretesting, etc.), it tends to minimize the difficulty of these tasks. Pretesting, for example, involves more than informal question-and-answer sessions with prospective audiences. Pretesting is a rigorous discipline which implies strict methodologies and procedures. Without at least a modicum of such rigor, pretesting is often subjective, imprecise, and, at worst, misleading. Researching audience attitudes about the subject matter being presented is equally difficult.

Second, although the book stresses the need to draw better in order to reach illiterate audiences, it minimizes the essential point that anything less than excellent, exact pictorial representation is useless for audiences unfamiliar with graphic conventions. In many countries with largely rural, illiterate populations living in media-scarce environments, it has been suggested that it is better not to use drawings at all, since highly trained artists are simply not available.

Third, the book stresses the artist's need to know about all aspects of the subject matter to be presented and the audience to whom it is to be presented. This is a questionable premise. If a team approach is assumed, then it is up to the research and "creative" people to tell the artist exactly what to draw, according to the information they have about the knowledge, attitudes, practices, traditions, and *mores* of a given population. In such an efficient operation, the artist is an indispensable skilled technician who executes a given task with precision and accuracy. He/she need not be necessarily versed in social anthropology or perceptual psychology (although a conceptual familiarity with these subjects would, of course, be advantageous).

The book as a whole, then, represents an important effort to convey the issues and techniques of development communications to both artists and local development communicators. Yet, it may ask more of the artist than is either necessary or realistically possible. ■

Reviewed by Ronald Parlato, an independent consultant working in the fields of health, nutrition, and population communications.

Annual Conference

The 1981 Annual Conference of the International Institute of Communications (ICC) will take place September 7-10, 1981, in Strasbourg, France. To register, or to obtain further information, please write as soon as possible to: Brigitte Chaintreau, ICC Conference Registration, MIDEM Organization, 179 Avenue Victor Hugo, 75116 Paris, France.

4 *Professional Development and Educational Technology,* edited by Information Dynamics, Inc. (Washington: Association for Educational Communications & Technology, 1980), 168 pp.

In publishing the *Proceedings of the National Conference on Professional Development and Educational Technology,* the Association for Educational Communications and Technology (AECT) has performed a useful service to education and the educational technology field. The Conference, held in Washington, D.C., January 16-18, 1980, addressed the increased use of technology in educational settings and its impact on educators. It was sponsored by AECT and the Department of Education's Federal Interagency Committee on Education. The book is composed of 19 articles, representing papers presented at the Conference by a variety of persons well known in educational technology and well versed in its various aspects. The volume concludes with a list of Conference findings and recommendations.

To understand the Conference structure, the reader should realize, as part II of the Forword explains, that Day One was devoted to identifying problems, refining issues, and setting priorities. On Day Two, participants examined case studies and discussed possible solutions to the problems, and on Day Three they made recommendations for action. A problem here is that the articles appear not to be sequentially ordered by the days on which they were presented, and are not identified as to the theme to which they pertain. This is confusing and weakens what would otherwise be a logical flow.

Information contained in the articles will be of particular value to people seeking information on technology and its implications for professional development, to persons currently out of touch with developments in educational technology, and to those new to the field. Newcomers and persons interested in updating their knowledge will find the book offers a collection of brief, self-contained articles that describe the use of videodisc, computers, satellites, broadcast television, and other technologies which have been applied to learning activities. Readers seeking information on professional development will find that many articles raise issues regarding teacher training, certification, accreditation, and other points of interest for career planners. Possible solutions to some of these problems are suggested in the list of recommendations.

It is now over a year since the Conference was held, and some of the material in the book is out of date. For instance, the Introduction does not reflect current political reality. The then-U.S. Commissioner of Education notes that there should be a central, coordinating force to meet the information needs of the nation's schools and libraries. He suggests this coordination be the responsibility of the Office of Education and eventually of the "new" Department of Education. Events following the Conference have introduced a new administration to the United States, and have signaled a shift to decentralized educational authority—factors which have significantly altered approaches to education.

Current dictum would no doubt prescribe a bottom-up, rather than a top-down, approach to such educational initiatives, and would most likely be more conservative in nature. Also, during the past year substantial growth has taken place in the computer market, and a number of new companies have entered the videodisc market. Both events will have an impact on education in the near future, and readers wishing current information on these technologies will need to look elsewhere for greater depth on these subjects. In addition, technologies such as the Instructional Television Fixed Service (ITFS) and teletext/viewdata are not represented. Inclusion of information on ITFS would have been particularly timely since this educational microwave service is currently in jeopardy.

Subjects treated by Conference presentors generally fall into the themes of issues, case studies, and future needs, as required by the Conference format. They are uneven in style and content, and some are better suited to publication than others. For instance, a presentation on "Training and Development in the 1980's—In Perspective" is a series of facts and short quotations that are indicators of training needs, but the pieces do not serve well as an article. The presentor, Kevin O'Sullivan, is an excellent speaker, however, and his presentation was probably one of the best aural experiences of the Conference. On the other hand some of the more scholarly works, such as "Educational Database Systems and the Classroom Teacher" by Fred Roseneau, make excellent articles but may have been too detailed for audiences to digest at the Conference. Thus, the book does a service by making articles such as the latter available in print.

A serious problem with the publication is the quality of the final chapter which contains Conference findings and recommendations. Little attention seems to have been given to analyzing, synthesizing, or otherwise providing structured conclusions that could be of value to decision-makers. There is also a strong recommendation for more conferences, which appears self-serving. In general, problems with this chapter reflect problems with the volume as a whole. While much valuable information is included, and it is better published in its present form than not at all, some judicious editing could have produced a more professional and useful product. In line with this are the disappointing number of typographical, spelling, and other proofreading errors. "Principles" for "principals" is certainly out of place in an educational work. Acronyms are not identified and appendices are not appended. And, w[illegible] amusing, such errors as the biggest "bank[illegible] the buck" are distracting.

Nevertheless, the book serves a purpose. Too often, conferences such as this fail to deliver a tangible product. That this one did, and that recommendations represent a consensus of participants' views is important. Valuable information is included in the papers, despite the fact that selective reading is necessary. The effort holds promise for better things to come in that it is an expansion and enhancement of its predecessor conference held in 1978 on "Teacher Training and Educational Technology." If further conferences are held as recommended, improvements can be expected in the next set of proceedings. In any case, the current volume is useful and deserves some attention. ■

Reviewed by Ann Erdman, an Educational Telecommunications Analyst with the U.S. Department of Education.

5 *Inventaire de Matériels Didactiques Peu Couteux Produits en Afrique* Bureau Régional de l'UNESCO pour l'Education en Afrique. (Dakar, Senegal, 1980), 104 pp. In French, illustr[illegible] with drawings and diagrams. Mimeographed.

In an effort to share innovative educational uses of local materials and appropriate technology in Africa, BREDA (Bureau Régional de l'UNESCO pour l'Education en Afrique) put together this *Inventaire de Matériels Didactiques Peu Couteux Produits en Afrique (Catalog of Low-Cost Teaching Materials Produced in Africa).* In this 1980 Catalog, the 1978 Preliminary Catalog has been expanded and formalized. More editions are planned, and readers are encouraged to react and contribute their own ideas for inclusion in future versions. Since reading this catalog definitely delights the mind and stimulates the imagination, new ideas are certain to come forth as a result.

African teachers, particularly of scientific and technical subjects, usually lack equipment and money to buy educational materials, and the situation is unlikely to change soon. Faced with this shortage, imaginative teachers all over the continent have put their minds, hands, and locally available materials together to produce teaching tools they need. This book catalogs a wonderful array of th[illegible] creations and tells how to make mo[illegible] them. The 80 items described range from home-made ink, paper, and bamboo fountain pens to complicated apparatus for scientific demonstrations: a solar still and an atmospheric pressure gauge, for example. The

materials used range from primitive (sand, pebbles, beeswax, tree branches) to modern (glue, plastic bags, copper wire, metal pipes) to rubbish (empty tins, discarded ballpoint pen shafts, bicycle spokes, old inner tubes). The teaching materials themselves are presented alphabetically and indexed according to the grade level at which they can be used. The construction materials are also indexed, and an annotated list of producing agencies includes addresses and names of contacts.

This is a most useful list, not just because of its contents, but because the marvelous variety of creative solutions to common problems will give any reader new ideas about how to produce teaching materials with whatever simple materials may be available. ■

Available from the Bureau Régional de l'UNESCO pour l'Education en Afrique, (BREDA), 12, Avenue Roume, B.P. 3311, Dakar, Senegal.

Reviewed by Susan Colgate

View: Portapak Video

Readers who have a particular interest in the use of video for development may want to look into a simple and straightforward course in basic Portapak video skills that was developed by the Fantasy Factory Video, Ltd., for UNESCO's Division of Structures, Content, Methods, and Techniques of Education. It was designed as a distance learning course for small groups for whom English is a second language. The target audience includes production personnel (who could move through the course modules quickly) but the course would be particularly valuable for extension and community development workers who need instructional or motivational tools for the field.

With a trainer, manuals (trainer's and student's) divided into modules, and a 30-minute videotape to illustrate points along the way, the course will teach students such basics as loading the tape, connecting the camera and microphone, selecting the proper lighting, using the tripod, and caring for the lenses. Upon completion of the course, students are expected to be able to produce a viewable tape.

An institution wishing to offer this course would need access to a Portapak with its accessories and a monitor. (The course is structured around the Sony Rover Portapak.) While a trainer without previous video experience can train him- or herself with the course materials, an experienced user as trainer would lessen group uncertainties and anxieties of an unfamiliar medium. Interested persons can receive cost and other information by writing to the Centre for Advanced TV Studies, 42 Theobald's Road, London WC1X 8NW, England.

Video from Australia

The Centre for Advanced TV Studies is also a useful resource for publications that deal with the technical and applied aspects of video and film. To supplement the Portapak Course, the reader may wish to obtain a 44-page manual on *Basic Video* developed by the Australian Film and Television School. The manual deals with the basic techniques of production, and includes helpful information on the various kinds of scripts (e.g. camera, narration, shooting), a checklist for interviews, and a review of the principles of editing. All of this is presented in simple sequence so as to guide the novice or jog the memory of the more experienced.

Films for Understanding

There is increasing interest in the developed world in turning the viewing of a documentary about the developing world into a useful and positive learning experience. In the past, too many films simply caused a reaction of hopelessness, or left the viewer baffled and uncomprehending. The process of consciousness-raising with a discussion leader, using carefully crafted films, is being promoted as an effective way to learn about and understand conditions in the Third World.

Raising Consciousness Through Film is a 53-page study from the Sociological Institute of the University of Utrecht. The Dutch government was interested in raising the perception of conditions of the Third World in Holland, as well as learning how attitudes toward the Third World could be changed. To explore this, university researchers took six social documentaries to various school, church, and political groups to see what kinds of discussions they evoked, how leaders should structure discussions, and what sorts of films best achieve a degree of consciousness-raising. The findings indicated that a film that presents a structured and limited number of viewpoints with which the audience can identify is most successful in achieving Freire's "generative moment," whereby "people begin to understand the social forces which determine their own social situation as a result of the discussion of examples elsewhere in the world."

Finding Films

Hand in hand with this study goes *Seeing and Perceiving: Films in a World of Change.* The authors, Neil Taylor and Robin Richardson, have attempted to put into a single booklet all the information one would need in Great Britain to find a film about a developing country (there are generous abstracts of 50 selected films); how to design a program around the film, screen it, perceive it, and discuss it. Although written for a British audience, there is much here that is universal, applicable or adaptable to any group wishing to use film to improve a social education process. ■

For information about these and other publications, contact the Centre for Advanced TV Studies, 42 Theobald's Road, London WC1X 8NW, England.

Reviewed by Judy Brace.

Netherlands Courses for Third World Journalists

In an effort to encourage a free and balanced flow of information in the world, the Netherlands is soon to start a training program for Third World journalists to be held both in Holland and in certain areas of the Third World. The purpose of the training is to further the professionalism of already-practicing newspaper journalists in developing nations. Training will focus on such issues as news-gathering capability, instruments of reporting, and selection of news items. The goal of the program is to promote a more efficient and effective flow of information to newspaper readers, and to give readers an enhanced understanding of the development processes in their societies.

The training program has been initiated by a number of newspapers and journalists' organizations in Holland. Radio Nederland Training Centre, which has long experience in the training of radio and television journalists from Third World countries, will be in charge of the 32-month project. Some 30 members of the press, mainly from the developing world, have been invited to advise on the course curriculum. Plans call for two 12-week courses in Holland plus three shorter courses in the Caribbean, in Latin America, and in either Africa or Asia.

The entire project is being financed by the Nederlands Minister for Development Cooperation. Further information about this training program can be obtained at the Netherlands' Embassies or directly from the Radio Nederland Training Centre, P.O. Box 222, Hilversum, Holland.

(continued from page 5)

Picture delay time is one of the factors inhibiting the use of slow-scan technology, partly because people are used to television being a medium of motion. However, most of the information we share is in a still mode. For the exchange of graphic data, or any image that might be suitable for a slide presentation, slow-scan is an appropriate medium. Discussion can continue while a picture is building. The person sending can prepare the sequence ahead of time, making sure each image is properly centered and focused before transmission. It is a simple matter to reposition the camera and focus on a detail, or send a different picture if asked.

Since the picture is received as a series of audible tones, it may be recorded on an audio cassette. File copy can be made by photographing the monitor or attaching a hard copy machine to the system.

Global scientific weather information—radar scans, for example—may arrive by slow-scan. The visual communication medium offers two-way political participation to residents of rural villages, overcoming geographic barriers. Slow-scan can keep an eye on volcanoes, or stormy mountain passes. It extends teachers to distant classrooms. It reports the status of gauges on drilling platforms to monitoring stations hundreds of miles away. Installed on ships, it allows visual contact with shore personnel.

Slow-scan technology is a viable means of long-distance picture communication, adaptable to rugged or urbanized environs, to sophisticated or common communications networks. Since it is unfamiliar to most people, it poses problems common to any new tool. In considering this technology's application to a given need, the decision whether or not to adopt slow-scan should be based on the importance of receiving immediate visual information. ■

For further information, contact Colorado Video, Inc., Box 928, Boulder, Colorado USA 80306.

Patricia Nettles is the Advertising Manager at Colorado Video, Inc., a manufacturer of slow-scan television systems.

Mobile Training Units: A Call for Information

The Resource Center of the Clearinghouse on Development Communication is receiving a growing number of requests for information about the use of mobile training units in developing countries. If you have, or know about, such a program using mobile units for training purposes, won't you send us documentation, or write to us, so that we can put others in contact with you?

Multi-Media Approach Highlights Venezuela's Literacy Campaign: A Progress Report

by Wilson Velandia B.

A recent issue of *Development Communication Report* (April, 1980, No. 30) was devoted to world illiteracy and to some attempts to provide effective literacy programs around the world. It is important here to summarize certain facts about illiteracy:

- Despite the declaration of education as a Human Right in 1948, millions of people, mostly in developing countries, will not have the opportunity to learn the fundamental skills of reading, writing, and basic arithmetic.
- While the *percentage* of adult illiterates in the world has declined, *the absolute number has increased.* It is estimated that in 1990, there will be about 884 million illiterates in the world, as compared with about 740 million in 1970.
- These estimates of the actual number of illiterates in the world are considered to be quite low, because they often apply only to people 15 years and older, and are usually based on the response to a single question ("Do you know how to read and write?") without any testing for accuracy.
- Low literacy rates correspond to such factors as a high rate of population growth, low calorie intake, low life expectancy, and low per capita income. (R. McNamara, Address to the Board of Governors, World Bank, 1979).
- Illiteracy rates are higher for women than for men, because educational opportunities often do not exist for women.

Illiteracy in Venezuela

Because of its many valuable natural resources, including its rich oil fields, Venezuela has an impressive economic growth rate. Per capita income in Venezuela has increased dramatically over the last 20 years.

In the last few years Venezuela has firmly committed itself to the development of its human resources, especially at the technical and professional levels. This investment represents one of Venezuela's most valuable assets. But the lack of basic education for large sectors of the population has been and still is widespread. In his television address launching the Nationwide Literacy Campaign (Campaña Libertadora de Alfabetizacion), President Luis Herrera Campins noted:

> Despite efforts made to obliterate illiteracy, Venezuela has today a self-declared illiteracy rate of 16%; but how many more are functional illiterates? Our latest statistics indicate that more than 1,300,000 persons over the age of 14 cannot read or write; about 300,000 do not possess any education; and more than 1,600,000 have only 1 to 3 years of elementary education.

Response to a National Challenge

Such realities were analyzed and discussed with leaders in the private sector and with influential members of the Venezuelan government. A quick response and strong support from the private sector made it possible to start developing an alternative literacy system; first, with a targeted audience on a *hacienda* (Mata de Barbara) located in the heart of the flat, hot, and inhospitable southwestern plains of Venezuela; next, in seven other areas in the country, including the poor *barrios* surrounding Caracas. The funds for these initial activities came from the Diego Cisneros Foundation, through the support of Gustavo Cisneros.

While the process of experimenting and adapting the instructional system was underway, leaders and businessmen were being contacted and sensitized to the ills suffered by millions of people, to the importance of literacy and basic education, and to the promising economic returns of investing in the development of the country's human resources. They were challenged to disprove the belief that universal literacy can only be achieved after "revolutionaries" take over, and made aware of the importance of a unified effort in pursuit of a national goal: to celebrate the bicentennial of the birth of Simon Bolivar (b. 1783) without adult illiterates in Venezuela.

All these efforts met with a positive response from private leaders and led to the establishment of a new organization: Asociación Cultural para el Desarrollo (ACUDE). From the beginning, ACUDE made the conscious decision to build the literacy program around an active multi-media campaign that stressed a strong promotional system to motivate people.

ACUDE, as a nonformal educational organization, has certain important characteristics: it is private, nonprofit, tax-exempt, and nonpartisan. It is a coordinating agency, set up to participate with other institutions, and devoted to creating and providing nonformal educational opportunities for the people, especially those who have had little or no access to formal educational systems.

ACUDE is the pivotal point in the organization, promotion, and coordination of the nationwide literacy campaign in Venezuela. CORPA, a Venezuelan firm experienced in the design of mass media campaigns, and GENESIS, a company specializing in marketing tactics, are providing invaluable assistance in

designing radio and TV messages to promote the campaign, and in designing marketing strategies.

The response from the official sector has also been enthusiastic. The Executive Committee for the Celebration of the Bicentennial of Simon Bolivar eagerly accepted the idea of including the literacy campaign as one of its most important endeavors, and the executive branch of the government wholeheartedly endorsed the idea of the campaign.

Operational Model of ACUDE

ACUDE was established in November, 1979. It is not a huge bureacratic apparatus; it is a small, dynamic, and efficient unit, with certain characteristics:

1. ACUDE acts as facilitator and promoter of a national literacy campaign. It provides a motivation, an instructional system, and a methodology. Its major role consists of inviting others to participate in the campaign.

2. Because ACUDE made the decision to work at the motivational level, it does not assume the direct responsibility for organizing or providing complementary services to individual literacy groups. ACUDE triggers peoples' interest in already-existing institutions and grass-roots organizations.

3. ACUDE adopts a multi-media approach, with radio and TV accomplishing different, coordinated, and complementary functions. The campaign stresses the point that it is a privilege for literate people to share their literacy with others.

4. The campaign is directed at both rural and urban sectors, and the instructional system has been adapted to account for regional differences.

5. The operational model includes different components (political support, organizational resources, mass media, instructional system, etc.). It was necessary to identify those components, define their interrelations (promotion, coordination, feedback, personal interaction, technical assistance), and put them to work toward a common objective.

6. In the operational model, the only teaching-learning relationship occurs between the illiterates and the facilitator. Radio and TV messages encourage this relationship throughout the country.

7. The model does not require new classrooms or buildings, but calls for the use of already-existing resources.

8. The model assumes the development of a strong promotional system within ACUDE using mass media and community-based organizations.

Instructional System

The instructional system (called Sono Estudio) used in this literacy campaign is designed to be flexible. It consists of the following elements:

- a primer
- a 31-record set
- a record player
- a facilitator *(auxiliar)*

José Alvarez Stelling, President of ACUDE, described the system at the launching of the campaign:

> It is a simple system, easy to use anywhere, at any time. It can be adapted to the learning pace of diverse participants. It is an indefatigable teacher that repeats as many times as necessary, and that encourages reflection, dialogue, and participation in community actions. It cultivates in the participants an understanding of the importance of and the possibility for self-education, self-advancement, and self-improvement based on one's own efforts.

The instructional system is characterized by flexibility. Some highlights are:

- Flexibility in *time:* The system can be used whenever the participants and the facilitator agree to meet and work.
- Flexibility in group *size:* It can be used by one or several participants.
- Flexibility in *place:* The system can be used almost anywhere (the record player operates with batteries or conventional electric power).
- Flexibility in *length of the learning sessions:* The time commitment will depend on the decision of the participants, with the average session lasting close to two hours. On the average, the whole course can be completed within 100 sessions.
- Flexibility to adapt to the *learning rhythm* of the participants: Each person or group may advance at an individual rate.

The system teaches people to read and write, increases their vocabulary, encourages participants to discuss and share their concerns, and introduces users to the four mathematical operations. The system includes a whole series of messages in health, family life, community participation, economics, self-esteem, ethics, and democratic values.

Initial Results

Public response has been encouraging:

- In just 45 days, 15,000 Sono Estudio sets were distributed and *sold* (the price of a set is about U.S. $22.50).
- Another 60,000 sets were ordered and are being distributed.
- At the end of 1981, the first full year of the campaign, it is projected that 120,000 sets will have been distributed, sold, and used in different regions of Venezuela, including those places where formal educational services do not exist. Assuming that an average of five persons use each set, at the end of the first year, 600,000 people will have been exposed to the literacy program. ■

Wilson Velandia B., Ph.D., is Programs Executive Director of Media and Contents, Inc. (MEDCON), a private consulting firm specializing in mass media and nonformal education. As consultant to ACUDE, he has worked closely with the Venezuelan literacy campaign.

Twelfth World Conference Correspondence Education

Learning at a Distance is the theme of the Twelfth World Conference sponsored by the International Council for Correspondence Education (ICCE) to be held June 9-15, 1982, in Vancouver, British Columbia, Canada.

During the 1970's distance (or correspondence) education experienced faster growth and more radical change than any other educational area because of the use of electronic media and systematic techniques for designing instruction.

Conference topics include learner characteristics, economics of distance education, use of technological media, tutoring and support services, recent research findings, reduction of dropout rates, and distance education and national development.

The conference fee is U.S. $250 for ICCE members, U.S. $290 for non-members. A complete program and registration forms will be available in August 1981. For information on the 1982 conference and also on ICCE membership, write to: Dr. Ian Mugridge, Open Learning Institute, 7671 Alderbridge Way, Richmond, B.C., Canada. V6X 1Z9.

Help in Communications Pretesting: New Booklet Available

For those involved in planning social and health communications, evaluating audience response to messages and materials is an important part of measuring program effectiveness. Pretesting helps planners, educators, and communicators in a variety of fields to assess the audience's comprehension, attitudes, and perceptions of new information. The information obtained from pretesting can be used to make improvements while revisions are still feasible and affordable. *Pretesting in Health Communications,* now available from the National Cancer Institute, describes the purposes and principles of pretesting, and the resources needed to conduct pretesting research. It includes a glossary of terms and a bibliography, and is available in English only.

The booklet, third in a series of publications on pretesting techniques, is complemented by *Readability Testing in Cancer Communications* and *Health Message Testing Service.* Copies of the three booklets are available free of charge from: Rose Mary Romano, Office of Cancer Communications, National Cancer Institute, Building 31, Room 10A 18, Bethesda, Maryland 20205 USA.

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most village training groups have grown, averaging about 20 in the beginning and growing to more than 30 by the end. The basic and repeated use of simple visual aids appears to have contributed to this trend.

Throughout training conducted in the villages, this oral, pictorial, and written technique was used repeatedly by the Tanzanian trainers. For example, they wanted to train some village councils in better decision-making techniques, especially group decision-making. During the U.S. phase of their own training they had seen an effective and popular exercise called "The NASA Game" which was developed for training American managers in improved group decision-making. The Tanzanians re-created the exercise as "The Safari Game" substituting a situation villagers could relate to better than they could to getting lost on the moon. They prepared flipchart visuals to represent the storyline in the game. They also prepared visuals to represent the items around which people had to make decisions. Then they wrote out the storyline and the decision items in charts in Swahili. When they presented the exercise, they again used all three modes, oral, pictorial, and written Swahili.

The trainers have not yet begun to use video-playback in the village training, because in their judgment that would be bringing a little too much "magic" to the village for the first training experience. They have not, however, precluded doing so in the future. Their VTR system is battery operated, and therefore is not dependent on electricity in the village.

Residential Training

After the initial training, each village selected 15 leaders and potential leaders to come to one of the residential training centers for one month of advanced training. People from four villages came to a residential training center at one time, where they trained in groups of thirty. (A prerequisite for residential training was that all be able to read written Swahili.) In this training design, the Tanzanian trainers came up with a different mix of media to support their training.

One important training unit is leadership training. There, trainers wanted village leaders to recognize that their leadership style should be chosen on the basis of the situation and the other people involved. The purpose was to help participants broaden their range of leadership style, and to get better at matching the right style and skills to the situation. In the course of this unit, trainers used both video and audio taping and feedback frequently. Villagers participated in several role plays, which were captured either on video or audio tape. These were then played back for analysis, either by those involved in the role play, or by the entire group. The trainers reported that video and audio feedback had a strong impact on participants, particularly on those who currently held leadership positions. They often had one view of their own leadership style and skills, and when fellow villagers contradicted that view, they sometimes got defensive. When they saw themselves and heard themselves on tape, they were sometimes devastated. The trainers had to become exceptionally skillful in managing this feedback process so that it resulted in learning and change, rather than defensiveness and anger.

In another leadership training unit the design called for participants to complete a self-diagnosis on their styles and skills. If the diagnostic instrument had been printed on 8-½″ by 11″ paper, it would have been approximately six pages long. But in Tanzania, paper is in extremely short supply. So the trainers designed a visual display to put the instrument up in front of 30 people, and created a 1-page scoring sheet to hand out. Thus each participant used only one sheet of paper instead of seven for self-diagnosis. In view of the fact that more than 300 villagers will have been trained by the end of this year, that is not an insignificant saving.

A final way in which the trainers used videotape media was in the opening climate-setting session in residential training. In the first residential training program in October of 1980, the Minister of State for Regional Administration and Rural Development, Jackson Makwetta, opened the session with an inspiring, amusing, and perceptive description of the methods and training approaches to be used in the residential training. One of the Tanzanian trainers/media specialists taped the Minister performing live with this first group of village trainees. That tape was edited, and a narrative voice-over made, so that in future residential training openings, when villagers cannot have Minister Makwetta in person, they can have him on tape.

Orientation and Outreach

The Tanzanian team is also using mixed media in the orientation and outreach packages which they are currently developing. At the central residential training site, trainers are creating photographic displays at various locations around the center, so that they can walk visitors through the various stages of village intervention, residential training, village follow-up, technical assistance, etc., with visual support from photographs taken in the villages and in residential training. In addition, they are gathering slides and developing a script for a slidetape show which will be used as part of their outreach effort with visitors to the center. They plan to take this slide and tape package into new villages as an orientation before they begin training for needs assessments surveys.

Ultimately, the trainers plan to use both videotape and slidetape to present packages directed at villages and village development.

Conclusion

While many of these examples may be seen as routine in the eyes of U.S. trainers accustomed to such media support technology, their application in Tanzania is a new and powerful addition to the effectiveness and impact of Tanzanian training teams. As more media-based packages are developed and published, dependency on highly trained Tanzanian trainers will lessen, and the knowledge, skills, and attitudes being developed through the Training for Rural Development Project can spread beyond the several hundred villages targeted in the pilot regions, and be extended nationally to the nearly 8,000 villages which need to be reached in this decade for the project to achieve its ultimate goals. ■

As a consultant to USAID and USDA, William Le Clere is the lead trainer of trainers in the Training for Rural Development Project in Tanzania. He is a founder and director of the Institute for Planned Change, Inc., in Washington, D.C.

(continued from page 1)

Monitoring and flexibility

While we are convinced that the training program is viable, a strong monitoring component has been built in, as has sufficient flexibility to make any necessary "in-flight" course corrections.

The first notions that universal curriculum elements might exist in the field of interpersonal communications came from our early workshops, and were confirmed by later meetings of curriculum and training experts. We fully expect that the initial package of training materials presently being developed will be modified as the program progresses. The resource center at the Institute of Adult Studies has been charged with the tasks of collecting experiences from the country training programs and integrating them into revised training materials. This will, we hope, gradually improve the quality of what is taught and how it is presented.

The new training program as it now stands is a good one. There may be other ways of achieving the same goals, and surely there are other important goals which we have not focused on in this project. But the reality of the vast regiments of insufficiently trained field extension staff, largely untapped and under-used, moves us to attempt to provide the means by which they may be properly equipped to join the battle. ■

Philip Vincent is Regional Management Advisor for UNICEF in Kenya, and has worked identifying training resources in many countries.

A Framework For Telecommunications Training

In a report commissioned by the Development Support Bureau (Office of Education and Human Resources) of the United States Agency for International Development and published by the Institute for Communication Research at Stanford University, Jeanne Moulton and Peter Spain present an analysis of personnel training and functions required for successful communications projects in developing countries. Referring here only to electronic media communications, the authors break down the training for such projects into seven functional areas.

Specific categories of training for telecommunications projects include the following:

1. *Training in development policy.* Development policy planners will work in high-level ministry or government positions. They influence how and whether telecommunications media will be used to meet national development goals.

2. *Training in telecommunications policy and applications.* Media policy planners will work in ministries such as Information or Posts and Telegraphs, and their work is to implement the development goals set by others. Because they will help officials use the media effectively, they need a solid grounding in current and potential telecommunications applications.

3. *Training in telecommunications management.* Media project managers are to be the link between the program and the public it serves. They will manage and implement media-based projects, and must ensure the political support of those who initiated the project.

4. *Training in message design.* Message design specialists will prepare the messages to be broadcast. They need to know how to survey their audiences, and how to tailor material to those audiences, and they must be flexible enough to revise their programs as necessary.

5. *Training in evaluation.* Evaluation specialists will work with the message-designers in evaluating the audience make-up and characteristics before messages are produced. They will monitor and evaluate the messages after they are produced, and provide feedback at every level of the program.

6. *Training in telecommunications production.* These media specialists will transform the curricula or points to be made into the messages to be broadcast. They need skills in audio, video, production, graphics, and maintenance of hardware.

7. *Training in field supervision.* Field supervisors will work on the local level, in classrooms and villages. They must make sure the programs are understood and acted upon. These people may be village-level workers, or regional or district supervisors.

Printing for Development

Development and education projects can be significantly enhanced by low-cost do-it-yourself printing. It is possible to produce small-scale and inexpensive publications to meet specific needs using local languages and visual images that are understood by local people.

To help encourage the spread of printing as a decentralized form of communication, Jonathan Zeitlyn is researching printing methods appropriate for development projects in the Third World. Drawing on his work establishing community printing centers in Britain, and on his recent fieldwork in India, Zeitlyn plans to publish a handbook containing examples and case studies of work and projects involving low-cost printing.

The author would like to hear from readers of *DCR* having experience with specific projects or problems in connection with using printing for development. Please send suggestions, experience, and/or examples to: Jonathan Zeitlyn, 51 Chetwynd Road, London NW5, England, UK.

Looking Into Microfiche

Have you ever wished you could store or carry a large amount of research or reference material in a very small space? Why not try microfiche? This will be a familiar word to you; you have often read it in "On File at ERIC" in *DCR*. Yet you have probably never considered setting up your own microfiche library. Perhaps you think of microfiche as something only libraries and large institutions are equipped to use. Or maybe you assume that a microfiche system would be too bothersome. Both of these misconceptions need to be set straight, because microfiche can be a valuable tool.

A microfiche is actually a sheet of polyester-base film, measuring approximately 4" x 6" (105mm x 148mm), containing the photographically reduced image of a printed document. The reduction ratio of the printed material is 24 to 1. As many as 98 pages can be copied onto a single microfiche, with an eye-readable title at the top. To read the document itself, one needs a viewer.

The simplest and least expensive microfiche viewer is an ambient viewer, available from National Camera for US$24; to use it one simply inserts the microfiche, holds the viewer to one's eye, and points it toward any available light source for reading. A battery-powered light attachment is available for an additional US$8.00, making it possible to read microfiche under any light conditions, and often increasing readability by as much as 50 percent. Desktop models are available that display the microfiche on a viewing screen that usually measures 11" x 14". These models cost US$180 and up.

You might want to consider the following kinds of materials available on microfiche:

USAID/NTIS (National Technical Information Service) has microfiche documents on such topics as agriculture, health, energy, and engineering.

University Microfilms has microfiche reproductions of a wide selection of magazines, journals, and other periodicals.

From ERIC one can order a single issue of *DCR* — 16 pages reproduced on a single microfiche — for 83c.

Thus, at a comparatively low cost, one can put together a complete small library, put it in one's pocket, and carry it to a project site.

Useful Names and Addresses:

1. ERIC Documentation and Reproduction Service
   P.O. Box 190
   Arlington, Virginia 22210, U.S.A.
2. National Technical Information Service
   5285 Port Royal Road
   Springfield, Virginia 22161, U.S.A.
3. University Microfilms International
   Serials Publishing Order Department
   300 North Zeeb Road
   Ann Arbor, Michigan 48106, U.S.A.
   Will send a large catalogue of materials upon request; also supplies viewers and other hardware.
4. Computer Microfilm International
   P.O. Box 190
   Arlington, Virginia 22210, U.S.A.
   Will transfer materials to microfiche.
5. National Camera
   2000 West Union Avenue
   Englewood, Colorado 80110, U.S.A.
   Supplies microfiche hardware, hand-held (ambient) viewers, microfiche binders, and full-size readers.

Many organizations, both in the United States and overseas, offer their documents on microfiche. ■

Benedict Tisa is a nonformal educational communications consultant.

Development Communication Report, published quarterly by the Clearinghouse on Development Communication, is distributed free to over 5,000 development professionals.

A center for materials and information on important applications of communication technology to development problems, the Clearinghouse is operated by the Academy for Educational Development, a nonprofit planning organization, and supported by the Development Support Bureau of the U.S. Agency for International Development as part of its program in educational technology and development communication.

Readers are invited to submit typed manuscripts of no more than 1000 words and to send in photographs.

Dilemmas in Country X: Candid Discussions about Failures

This Development Dilemma is perhaps more of a cautionary tale than an actual dilemma. It raises a number of issues that frequently confront both host governments and visiting consultants working in development. The situation described is an actual one, although the people involved have chosen not to specify the country in which the events occurred.

(As always, the editor invites readers to submit reports for this column. Authors' names—as well as those of the people, agencies, and countries involved in the projects—will be withheld upon request.)

The Minister of Education in a large Third World nation, Country X, having heard about a new and successful curriculum and instruction program in a neighboring country, wanted a similar project for the schools in his own country. He invited a team of specialists from a well-known U.S. Institute to come to Country X to design and implement such a program. As is the custom in Country X, this pilot curriculum project was discussed widely at the upper Ministry levels, but was not publicized with teachers or the public.

In due time, the consultants arrived in Country X, established good working relationships with their counterparts in the Ministry of Education's team which would administer the program, and began to plan for the curriculum and instruction project in selected elementary schools. Generally speaking, all was well for several months.

Then one morning, without warning, the local daily newspaper in the capital city carried a hostile lead article with huge headlines about the project. The article strongly opposed the new program, charging that the country's school children were being made "guinea pigs," in a "secret American project." The writer stated that Country X did not need, and indeed should not have, U.S. help in teaching its children. From the article, it appeared that the program was not wanted in Country X, at least by some people. The source of the story as identified by the article was a senior official in the powerful Teachers' Union.

The mechanism in Country X for responding to press criticism was cumbersome and slow. Information prepared by the head of the American team and his liaison in the Ministry was not readily available to the press; reporters had to go through routine channels and were not allowed to speak directly to the individuals involved. These tedious procedures fed the rumor that there was something secret about the project.

The team feared that the government's press people, who had not been adequately briefed, would respond too hastily or intemperately to emotional questions from the press, parliament, teachers, or parents who had read the original newspaper story. The result might be the cancellation of the project, and the loss of a great deal of time and work by dedicated people.

Even though, in time, the newspaper dropped this story to pick up on another more sensational topic, a number of questions had been raised, some of which by their very nature remain unanswered.

* * *

As developing nations phase out foreigners and expatriates, the roles of the foreign consultant and of the person inviting the assistance inevitably become more difficult. And while it is generally advisable for such consultants to keep a low profile, an ironic part of the situation is that in some countries, consultants may lose the respect and support of local officials if their profile is *too* low. Similarly, the person using the consultants may prefer not to publicize the foreign assistance, but by *not* publicizing the consultants' role, that person may then run the risk of appearing to be hiding something.

Fortunately, the development of the curriculum project had been collaborative from the start, though even that collaboration raised another dilemma: when the newspaper publicly attacked the project, the X-country staff on the team was caught with divided loyalties. Those team members were in a sense "guilty" by their association with the Americans, even though they believed strongly in the value of the project. Most people working in development are keenly aware of the growing ambivalence in the Third World about foreign expertise: folks want it and often request it, but at another level, they *don't* want it, they resent needing it, and feel it is offensive to have experts "imposed" on them even when they themselves invite the experts.

One certainty that emerges from this cautionary tale is that, by the very nature of development work, flaps and misunderstandings are inevitable. The press everywhere is eager for a good story, especially a sensational one. Men and women experienced in development work anticipate such events, and realize that the stronger the collaborative relations built up in host countries between foreign consultants and the people using them, the better the project will be able to weather the storms that may buffet it. ■

Development Communication Report

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Imaginative Use of Nonbroadcast Technology Directs Social Services to Isolated Audiences

by Ann Erdman

The rush to apply experimental new technologies to the social problems of the 70's has left history enough and evidence enough for the public service community to learn valuable lessons. The following article draws on a decade of using satellites for public service, and on over five years of experimentation with other information technologies for specialized audiences.

Today, everyone is aware that satellite-delivered communications can span tremendous distances. The increased interest in telephone and in videoconferencing, the phenomenal growth in computer networks, and the increasing use of cable television to carry varied consumer communication services, all attest to the new technologies' ability to cut time and cost and offer greater information variety than ever before.

What is not yet well known is that these "nonbroadcast technologies" have increasingly become more accessible and less expensive as modes of information delivery. "Nonbroadcast" is generally considered to refer to transmissions intended for reception by a specific audience rather than for direct reception by the general public. Nonbroadcast transmissions often require decoders, antennae, or other devices to receive and convert signals for use by the specific user or subscriber. Thus, satellites, cable television, microwave, telephone, subcarrier radio and TV channels, and other telecommunications systems which deliver signals to specific audiences are considered nonbroadcast technologies.

During the decade of the 70's the availability of commercial satellites, new cable systems offering 80 or more channels, and high-capacity computer networks all held promise for offering the public a dazzling array of new communication systems for specialized needs at relatively reasonable costs.

Recognizing this potential, the former U.S. Department of Health, Education, and Welfare (HEW) began to examine ways technologies could be used for distribution of social services, which have been estimated to be as much as 75 percent information-transfer in nature. The prospect of reaching rural populations with satellite, and urban populations with cable, appeared especially promising. Of particular interest to service-providers was the possibility of using telecommunications to distribute continuing education services, public awareness and consumer assistance messages, and information and referral services for public assistance.

In the early 70's there was keen national interest in putting technology to work for public services. When the National Aeronautics and Space Administration (NASA) asked the Department of HEW to sponsor community service experiments aboard an Applications Technology Satellite, ATS-6, HEW saw in the invitation a unique opportunity. A demonstration devised to test the concept took place in 1974 in three distinct geographic areas—the Appalachian Mountain and Rocky Mountain regions, and the State of Alaska. The demonstrations resulted in experimental projects that provided in-service training for teachers in the Appalachian area, career education for junior high school students in the Rocky Mountains, and instructional programs for village schools in Alaska. Health experiments included two-way consultation-at-a-distance with physicians for patients in rural Alaska, and instruction for medical students in states without medical schools. A health project of the Veterans Administration facilitated exchange of medical information between remote hospitals and urban medical teaching centers.

Evaluation of this satellite demonstration provides interesting insights into the initiation of technology projects in general and of satellite projects in particular. Many of the lessons learned apply to the Third World as well as to the developed world. On the plus side, the demonstration may be considered to have been successful in four respects:

1) the technical aspects of the project worked well, demonstrating that satellite service was useful for reaching remote communities isolated from normal radio (in the generic sense—audio, video, etc.) reception by distance or geographic barrier;
2) projects initiated in Appalachia and Alaska became so essential to the social services programs that sufficient support was secured to lease commercial satellite time for the services. The transition from experimental to commercial satellite systems was relatively smooth;
3) the Public Service Satellite Consortium (PSSC), an organization designed to identify potential social service users of satellite communications and to facilitate their access to transponder (satellite usage) time, was established, and has

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A publication of the Clearinghouse on Development Communication
Supported by the Bureau for Science and Technology of the U.S. Agency for International Development

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succeeded in developing a substantial user community;

4) the Corporation for Public Broadcasting was convinced by the experiments to move ahead with a satellite network for interconnection of all public broadcasting stations. The satellite network is now operating an effective system.

On the other hand, the failure of the Rocky Mountain project to sustain interest in and support for continued operation was a disappointment to demonstration planners. This failure is generally attributed to the project's inability to establish an institutional base of support. The prime contractor, a federation of states, proved unequal to the task and was subsequently dissolved, leaving no permanent institution with responsibility, interest, or resources to maintain the services.

In addition, poor maintenance of equipment and lack of technical assistance to teachers/facilitators resulted in disappointment with the services provided, and failure to sustain demand. These problems were a result of a combination of factors—defective TV sets, difficulties of servicing remote sites, and other management concerns common to communications projects, many of which can be forestalled to a large extent by effective early planning. Unfortunately for this project, adequate lead time for planning was not available.

Three observations which may help planners avoid similar implementation problems can be made about this project:

Observation #1: Projects intended for long-term operation must insure that local communities consider the proposed service necessary, that they accept the technology, and are prepared to deal with implementation problems.

Observation #2: Reliable equipment and effective maintenance policies are essential to efficient project performance.

Observation #3: Adequate training and support are critical to the effectiveness of on-site facilitators and acceptance of the service by end-users.

Interest in nonbroadcast communications generated by the ATS-6 experiments resulted in an HEW request for amendment of legislation (the *Communications Act of 1934*) to allow the Department to provide grants or contracts for the application of nonbroadcast technology to the delivery of HEW services. Congress enacted such legislation in 1976, establishing a Telecommunications Demonstration Program that subsequently awarded grants totalling $3 million to 15 projects, which ranged from a computer/telephone system for the deaf in Boston to a microwave system for migrant farm worker service in California. While the discussion here addresses only problems encountered in implementing the demonstrations, it is important to note that the projects eventually achieved a success rate of 75 to 80 percent in reaching their collective system and service goals.

Several problems common to these projects were associated with equipment, institutionalization, and utilization. We will look briefly at these problems to make a few further observations.

The Demonstration Program required that each project propose an *innovative* use of nonbroadcast telecommunications for the delivery of health, education, or other social services. Projects were also required to assess the needs of the target population, assure that the proposed project addressed those needs, and provide assurance of local support for the project after government funding ended.

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Projects Sponsored by the Telecommunications Demonstration Program, U.S. Department of Education

Grantee	Technology	Service	End-User
State of Alabama	Radio/telephone	Emergency medical	Rural medical patients
Deaf Community Ctr. Boston, Mass.	Computer/telephone	Electronic mail	Deaf persons
Center for Excellence (CenTeX) Williamsburg, Va.	Microwave/telephone/ cable/subcarrier radio	Specialized news, reading, consumer info.	Hearing- and visually-impaired, elderly, homebound students
Nat. Farm Worker Serv. Ctr., Cal.	Microwave/telephone	Social service network	Migrant workers
Medical Care Dev. Augusta, Me.	Slow-scan TV/telephone	Continuing education	Health professionals
PACE-Cook Co. Dept. of Corrections, Chicago, Ill.	Slow-scan TV/telephone	Employment, family visitation, training/education	Jail inmates
KSPS-TV, School Dist. #81, Spokane, Washington	Cable/microwave	Distribution of educational programming	Students
Univ. of Southern Maine, Portland	Computer/telephone	Human service teleconferencing network	Social service agencies
Univ. of Cincinnati, Ohio	Slow-scan TV/telephone	Library/physician consultation service	Health professionals
Pennsylvania State University	Cable/microwave	Continuing education	Students/general public
New York Univ.	Teletext (broadcast subcarrier)	Consumer information	General public
Wernersville State Hospital, Pa.	Microwave/cable TV	Interactive community service TV	Mental patients
Univ. of Wisconsin	Dial-access telephone	Health, consumer info.	General public
Univ. of Denver	Slow-scan TV/telephone/ facsimile	Library services	Rural communities, general public
Tri-State Red Cross Blood Center, Huntington, W. Va.	Computer/telephone	Blood inventory management	Hospitals

Rural Communications Project in Peru Uses Satellite to Serve Remote Jungle Areas

by Richard Martin

Isolation and lack of communication are obstacles to development of potentially productive areas in many countries. A good example is Peru, where that country's government has recently been directing new development resources to areas of its interior that have previously been virtually inaccessible. An ambitious program is under way to encourage the development of commerce, agricultural production, and essential public services in the country's rich northeastern jungle region. As a result of these efforts, the region has begun to attract settlers from less productive parts of the country, and it is hoped that eventually the area will produce large quantities of food products needed in the rest of the country.

To support this effort, the Peruvian National Telecommunications Company (ENTEL-Peru) and the U.S. Agency for International Development (AID) are developing an experimental, low-cost rural telecommunication project in the eastern jungle department of San Martin. In the past, this department's remoteness has been a major obstacle to development. Commercial agriculture on a regional scale has been slow to develop, and public services such as education and health care function sporadically, with little effective supervision or support.

Telephone service came to the region's largest city, Tarapoto, in 1979 with the installation of a communication satellite earth station. Operating through a quarter of a satellite transponder leased by ENTEL from INTELSAT, this new station provides the first reliable telephone service between Tarapoto and the capital city of Lima. Utilization of the new service has been high and continues to increase rapidly.

ENTEL is providing similar "DOMSAT" services to six other remote cities throughout the country. All of the ground stations used so far have been large INTELSAT-B type stations, costing $800,000 or more each.

The stations are proving to be an economical solution to the problem of providing telecommunication services to those remote population centers that generate a large volume of telephone traffic. However, because of their high cost, they can do little to alleviate the isolation of the many small communities where most of the people of the region live.

The ENTEL-AID project is an effort to extend communication services beyond the region's cities to the rural farming communities in the region. The project will link seven communities in a field test of the cost-effectiveness of rural communication services. The experimental communication network, designed to minimize costs, will consist of a combination of three small, thin-route communications satellite earth stations, each costing less than a fourth of what the larger INTELSAT-B earth stations cost. Completing the system will be village radio telephones and land telephone lines. System design, installation, operation, and maintenance are the responsibility of ENTEL-Peru. AID is providing electronic equipment, user training, and evaluation studies.

The project has a number of unusual features, the most important of which is its public service focus. Although the project is being implemented by a telephone company, preferential access to the system will be given to government development program staff working in remote health posts, rural schools, and agricultural extension offices. In most villages, a separate telephone line will be provided for the exclusive use of development workers, and special low tariffs will be developed for these users. ENTEL-Peru has established a separate office in its headquarters to manage the project, with a staff that includes sociologists and economists. It is expected that this office will become a permanent Office of Development Communication, encouraging the company to design services appropriate to the needs of rural communities and public service users.

Wide Variety of Services

Another unusual feature of the project is the variety of communication modes that will be available to users. In addition to traditional person-to-person or station-to-station service, the system will permit conference calling among three or more sites. In some sites, speakerphones will be used so that groups can participate in these "decentralized" meetings. The system will also be able to relay instructional radio programming to local radio stations in the project area for rebroadcast to the general public.

Before the communication network begins to operate in early 1982, planners will interview public service users and develop a utilization plan combining various specific applications. The communication network will make it possible for Peruvian development ministries to provide reliable support services to staff members working in the field.

Project-sponsored activities using the experimental communication network will include such areas as inservice training for rural primary school teachers, medical advice for village health paraprofessionals, and coordination of travel and distribution of supplies for agricultural extension agents.

The project is a test of new kinds of communication equipment and, more importantly, of new institutional arrangements for providing communication services to remote rural areas. It will be carefully evaluated in terms of costs, revenues generated, utilization of the system, and impact on the delivery of social services and on the pace of economic activity in participating communities.

The Peruvian rural communication services project will have an impact far beyond the seven participating villages. Neighboring Andean countries are being invited to observe the project and participate in the project evaluation. Evaluation data and other project information will be provided to telecommunication planners, development ministries, and international funding agencies. The experiment, if successful, will provide experience, models, and cost-effectiveness data that will help other countries analyze their own rural telecommunication needs and plan services that are reliable, economical, and responsive to development needs. ■

(This article was adapted with permission from the June 1981 issue of Uplink, *the newsletter of the AID Rural Satellite Program.)*

Richard Martin is an education specialist in the AID Bureau for Latin America and the Caribbean.

Learning About Water: Kit and Action Guide

This year marks the start of the United Nations' International Drinking Water Supply and Sanitation Decade. During the Decade many groups will join forces to help provide "clean water and adequate sanitation for all by the year 1990," the lack of which gravely affects human health and productivity and severely impedes development progress.

A kit has been produced to provide all those who will be involved in the Decade with basic information and action ideas. It contains a "Decade Dossier" outlining dimensions of the need and Decade strategies for action; four case histories on water/sanitation activities; a "Decade Action Guide" with suggestions and examples of specific activities for various Decade participants, a wall sheet and a set of photo sheets illustrating key Decade themes; and a listing of other information materials available.

The kit is available from UNDP Information Section, Palais des Nations, CH-1211 Geneva 10, Switzerland, or from UNDP, 1 United Nations Plaza, New York, NY 10017, USA.

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Glossary: The Language of Telecommunications

The language of telecommunications is changing as fast as the technologies of telecommunications. In this glossary, we have attempted to define some of the most commonly used terms in the specialized world of computers and telecommunications.

Because the language is constantly evolving, there may be those readers who disagree with certain definitions given here. To those who disagree with a definition, we want to make it clear that we do not claim perfection—we do not even anticipate having the last word. Write to us! Let us know what you think, and we will publish glossary updates at intervals.

Note: the terms marked with an asterisk (*) are words which are commonly used in several ways. The definitions given here are limited to their use as they apply to the new technologies.

AM: Amplitude modulation. (See Modulation.)

Analog: Representations which bear some physical relationship to the original quantity: usually electrical voltage, frequency, resistance or mechanical translation, or rotation. Contrast to digital.

Artificial Intelligence: Computer systems which perform functions normally associated with human reasoning and learning.

Audio Teleconference: See Teleconference.

Bandwidth: The maximum frequency (spectrum) measured in Hertz or cycles per second, between the two limiting frequencies of a channel.

Baud: Bits per second (bps) in a binary (two-state) telecommunications transmission.

Binary: The basis for calculations in computers: a numbering system having only two numbers, typically 0 and 1; a base system.

Bit: One binary digit. The smallest part of information with equally likely values or states, "0" or "1," or "yes" or "no." In electrical communication systems, a bit can be represented by the presence or absence of a pulse.

Broadband Communication: Communications using high frequency signals (e.g., 6 MgH, the bandwidth of a TV channel). Video teleconferencing is a broadband medium.

Byte: The group of bits, processed or operating together, needed for one character.

Cable Television: The use of a broadband cable (coaxial cable or optical fiber) to deliver video signals directly to television sets. Current systems may have the capability of transmitting signals in two directions.

CATV: Cable television or community antenna television.

Carrier: (*)Electromagnetic signal with a constant amplitude and frequency.

Central Office: (*)The local switch for a telephone system; sometimes referred to as a Class 5 Office, or a wire center.

Channel: (*)In communication, a single path or section of the electromagnetic spectrum which is uniquely assigned for a particular use.

Chip: (*)A thin silicon wafer on which electronic components are deposited in the form of integrated circuits.

Coaxial Cable: A metal cable consisting of a conductor surrounded by another conductor in the form of a tube which can carry broadband signals by guiding high-frequency electromagnetic radiation.

Communications Satellite: Satellite used to transmit voice, data, and program signals.

CPU: Central Processing Unit. The component in a stored program digital computer which performs arithmetic, logic, and control functions.

CRT: Cathode Ray Tube. A video display vacuum tube used in television sets and computer display terminals.

Data: (*)The raw information within a computer system.

Digital: A function which operates in discrete steps as contrasted to a continuous or analog function. Digital computers manipulate numbers encoded into binary (on-off) forms, while analog computers sum continuously varying forms. Digital communication is the transmission of information using discontinuous, discrete electrical or electromagnetic signals which change in frequency, polarity, or amplitude.

Direct Broadcast Satellite (DBS): A satellite system designed with sufficient power so that inexpensive earth stations can be used for direct residential reception.

Dish: (*)A parabolic antenna that is the primary element of an earth terminal.

Downlink: The transmission from a satellite to an earth station.

Duplex: (*)A transmission in which signals can go in both directions simultaneously.

Earth Terminal (or Earth Station): Equipment on the ground used to send and/or receive satellite communications.

Electromagnetic Radiation: A form of energy including radio and light which propagates through space in the form of oscillating electric and magnetic fields or "waves."

End Loop: A communications circuit which extends from the customer to the local switching center.

End-User: Ultimate consumer of a service.

Facsimile Transmission: The electronic transmission of pictures, charts, graphs, etc. from one place to another by radio, telegraphy, or telephone.

Fiber Optics: Communications technique based on a laser transmission that uses a fiber, or thread-like material, which carries light the way copper wires carry electricity.

Floppy Disc: A small, flexible disc carrying a magnetic medium in which digital data are stored for later retrieval and use.

Footprint: (*)That part of the earth's surface where a particular satellite's signal can be picked up. A footprint can cover one third of the globe, but will usually be less.

FM: Frequency modulation. (See Modulation.)

Frequency: The number of recurrences of a phenomenon during a specified period of time. The measurement unit of electrical frequency is the Hertz.

Geo-Synchronous Communication Satellites: Orbital space vehicles which appear to be stationary over one point above the equator, permitting the use of less-expensive earth stations without tracking equipment.

Gigahertz: (GHz) Billion Hertz (cycles per second).

Ground Station: See Earth Terminal.

Hardware: (*)The electrical and mechanical "body" or equipment used in telecommunications or computer systems.

Headend: Cable system site that houses the specially designed equipment needed to receive, process, and originate signals for a cable system.

Hertz: (Hz) The unit of frequency. One Hertz is equal to one cycle per second. Named in honor of Heinrich Hertz, first to detect such waves in 1883.

Input: The data that is entered into the computer; the act of entering data.

Interactive Media: A two-way telecommunications system that permits viewer response or participation. Interactive allows direct exchanges among people via one or more communication channels.

Interface: The place at which two systems (such as a computer and its supplementary equipment) meet and interact with each other; the means by which the interaction is made (e.g., an "interface card.")

International Telecommunication Union (ITU): An international organization affiliated with the U.N. which allocates radio frequencies through mutual agreement and coordinates telecommunications interconnections. Founded in 1865, it is the world's oldest such cooperative organization.

Kilohertz: (KHz) Thousand Hertz.

Logged In: (*) Connected to a computer.

Magnetic Disc: A form of computer memory in which data are stored in a magnetic oxide that coats a plastic or metal disc. The data are recorded and played back (read) by magnetic heads which traverse the rotating disc under programmed control.

Megahertz: (MHz) Million Hertz.

Memory: (*)The computer's information storage capability, also called "storage."

Microchip: An electronic circuit with multiple solid-state devices engraved through photolithographic or microbeam processes on one substrate.

Microcomputer: A set of microchips which can perform all of the functions of a digital stored program computer. (See Microprocessor.)

Microprocessor: A microchip which performs the logic functions of a digital computer.

Microwave: High-frequency radio waves used for point-to-point transmission.

Modem: A device which is used for interfacing (or matching) different functions of a communications system.

Modulation: (*)The process of modifying the carrier to impress on it the characteristics of another signal by changing its amplitude (AM), its frequency (FM), or its phase (PM), or by turning it on and off in a predetermined pattern (pulse code modulation).

Multiplex: The ability to transmit several signals from different sources to different destinations over a single channel at once.

Narrowband Communication: A communication system capable of carrying only a few voice channels or relatively slow-speed computer signals.

Nonbroadcast: Transmission directed to a specific audience. Also called **narrowcast,** it can include cable TV, satellite, teletext, etc.

Off-Line: Method of operation in which a device is not directly connected to a telecommunications system or operating computer.

On-Line: A method of operation in which a device is directly connected to a telecommunications system or an operating computer.

Operating System: A set of instructions for a computer which permits it to run various programs and handle scheduling, control of printers, terminals, memory devices, etc.

Optical Fiber: A thin, flexible glass fiber the size of a human hair which will transmit light waves capable of carrying vast amounts of information.

Output: The information generated by a computer.

Packet Switching: A technique of switching digital signals with computers whereby the signal stream is broken into small packets and reassembled in correct sequence at its destination. There are many variations used in data networks, in satellite communication, and for secure voice communications.

PBX: Private Branch Exchange; a telephone switching office.

Simplex: Transmission in only one direction at a time.

Slow-Scan Television: A technique of placing video signals on a narrowband circuit, such as a telephone line, which results in a picture changing every few seconds. Useful for transmitting still pictures.

Software: The instructions which direct a computer program. Any written materials or script, including films, videotapes, etc., for use in a communications system, or the program produced from the script. (See Hardware.)

Telecommunications: The use of wire, radio, optical, or other electromagnetic signals to transmit or receive signals, sounds, or images.

Teleconference: A meeting where participants in different locations are linked by a telecommunications system. Can be *audio* teleconference (voice only) or *video* teleconference (where participants see one another via TV). Satellites represent a successful communications medium for teleconferencing.

Teletext: Broadcasting service using several otherwise unused scanning lines between frames of TV pictures to transmit information which is displayed on the screen.

Transponder: The equipment on a satellite that accepts the signal sent from earth and after amplifying and changing the frequency, sends it back to earth for reception.

TV: Television.

Uplink: The transmission from an earth station to a satellite.

Videotex: Service similar to teletext except that information is delivered by telephone and can be used in the interactive mode. ■

This glossary was compiled with the help of a variety of people and sources. The primary print source, from which several definitions are reprinted with permission, is a program booklet prepared for a symposium "Communications in the Twenty-First Century," sponsored by The Colgate Darden Graduate School of Business Administration, the University of Virginia, in cooperation with The Annenberg School of Communications, University of Pennsylvania and the Annenberg School of Communications, University of Southern California. The Symposium, funded by Philip Morris Incorporated, was held in April, 1981, in Richmond, Virginia.

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Other requirements included standard provisions for responsible administration, staffing, fiscal management, and a self-evaluation of project results. The innovation requirement led three projects to propose the design and development of hybrid equipment. In all three cases, technical problems caused serious delays in project implementation, leading to the following observations:

Observation #4: Projects that plan to use highly specialized equipment must be prepared for implementation periods that are about 50 percent longer than projects which use readily available equipment. They must also allocate above-average budgets for staff education and equipment maintenance.

Again, as with the Rocky Mountain satellite demonstration, several projects which failed to secure other funding collapsed when government assistance ended. Generally, their problems were staff problems, a very difficult area to assess prior to project implementation. Retirement, resignation, and poor management ability prevented three projects from becoming operational.

A fourth project was foreshortened by unanticipated problems in obtaining regulatory approval of its system design. It thus lost second-year funding that would have substantially altered its prospects of becoming self-supporting.

Observation #5: Project staff must be carefully selected with respect to their dedication to project success, their management experience, and their ability to make substantial commitments of time (about three years) to a project.

Observation #6: Projects dependent on government or other outside support should have short- as well as long-term goals, so as to be able to show a record of incremental gains if funding is foreclosed prematurely.

Observation #7: Appropriate regulatory clearance for proposed use of radio spectrum *must be obtained prior to initiation* of any telecommunications project.

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In order to succeed, nonbroadcast technologies must promote user acceptance and reliance on communications services and, as a result, develop audiences willing to support continued operation. One of the most difficult problems of communications projects is that of striking an equitable balance between development of the technical system and development of its public service components. Systems must function smoothly and users must receive needed information in a timely manner to make the system viable. Both are equally important to the attainment of project goals.

Observation #8: Projects must allocate substantial resources to assure that systems attain their service goals and develop user acceptance and support.

Finally, it is interesting to observe that the nonbroadcast technology most heavily utilized in the demonstration projects was telephonic communication—one of the oldest, most reliable, and most accessible telecommunications systems in the U.S. Most projects used some form of telephonic communication to support their service or to act as its primary carrier. While we are seeing rapid development of satellite and cable systems, telephonic and broadcast services are still the most widely accessible communications media, and systems that piggyback on these signals or otherwise make use of their ubiquity probably have the greatest chance for long-term service and immediate success. This in no way diminishes the importance of cable, satellite, and other developing systems; it only suggests that availability and familiarity are perhaps of greater importance to the social services which seldom have the capital to support high-risk ventures. Thus, we conclude:

Observation #9: Organizations considering the application of nonbroadcast technology to the delivery of public or social service programs should look first at the most accessible, familiar, multipurpose communications systems available in their immediate area, and then, if necessary, enhance these systems to meet the needs of the target audience with the most reliable and appropriate of the new technologies. ■

Anyone desiring further information on projects sponsored by the Telecommunications Demonstration Program should note that the program is now administered by the U.S. Department of Education. Information may be obtained by writing to:

Telecommunications Program
U.S. Department of Education
Washington, D.C. 20202 USA.

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Radio Instructional Programs: Some Practical Guidelines for Scriptwriters and Planners

by Esta de Fossard

In today's world of universal and constant communication, radio is still one of the most effective ways of sending out information to a great many people over wide distances. In the United States, we are inclined to think of radio as useful for music and commercials and for very little else, but in many other countries of the world, particularly Third World countries, radio remains an important medium of education. To use radio effectively for education requires an understanding of the strengths and weaknesses of the medium, and an understanding of the methods of structuring and scripting radio instructional programs.

Most people assume that anyone who knows a subject well can automatically write a radio script for it. But good writing does not come automatically in any medium, perhaps least of all in radio, where the subtleties of the medium must be understood as well as, if not better than, the subject matter itself.

Instructional radio must always reflect its *raison d'être:* to instruct. A radio scriptwriter should therefore constantly remember the script's *purpose,* its *measurable instructional objectives,* and its *audience.*

The entertainment value of an educational script should be subliminal, almost accidental. Good education can be intriguing without being "entertaining" (in the contemporary sense of the word). Because a good educational radio script should convey the same enthusiasm, integrity, and fascination as a good classroom lesson, it is essential that the radio scriptwriter truly appreciate the subject being taught.

The Nature of Radio

Radio is the medium of visual imagination. It presents no actual pictures of its own, but invites its listeners to provide their own "pictures" in much the same way as reading does. The luxury of imagining pictures has been largely lost in our television-saturated age, as has our ability to listen attentively. The writer of a good radio script, therefore, must choose his or her words as carefully as a poet to attract the listeners' attention and encourage them to "put themselves in the picture."

Because it leaves so much to the listener's imagination, radio is a highly personal medium. The listener enters into a one-to-one relationship with the radio voices, as if indulging in conversation with them. A good radio script takes advantage of this intimacy to encourage listeners to feel a sense of personal involvement.

Constraints in Writing for Radio

Because radio relies on only *one* of the listener's senses to receive *all* of the information, complex ideas must be broken down into small concepts and reiterated in a variety of ways. It is useful to keep in mind that:

- characters must be clearly recognizable by their voices rather than by their physical appearances;
- names of characters must be used more frequently than they would be in normal life, or in visual presentations;
- emphasis and emotion must be carried by the voices or enhanced by accompanying "mood music."

While characters can be portrayed very effectively through voice, the setting presents another problem. In a visual presentation, the audience knows immediately when the action has moved from one place or scene to another. In radio, a scene change has to be indicated by a musical bridge, by ambient sound effects, or by an indication (preferably subtle) from one of the characters that the audience is now required to imagine itself in another place.

The Need for Restraint

At the same time, however, a radio program must avoid "medium overkill." There is a tendency, particularly in inexperienced producers and writers, to over-use sound effects and music. Too much sound can be as distracting to an audience as too little. Sound effects and music in radio production should be as appropriate and as subtle as visual imagery in a good film or television production.

In the same vein, it is particularly important for instructional radio to avoid using too many words. Indeed, almost ironically, words need to be used more sparingly than they might be in visual presentations, or than they would be in a classroom lesson. It is all too easy for listeners to become swamped by a sea of words and miss the message in the words. The skill of any educational scripting, be it for radio, television, or textbook, lies in making the instructional message clear, but not so blatant as to be boring.

The Needs of the Audience

An understanding of the audience is essential. The writer needs to know the age, the experience (both with radio and with the sub-

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ject being taught), and the ethnic and cultural backgrounds of the audience. He or she must also know the educational methods to which the audience is accustomed.

It is advisable for the scriptwriter(s) to sit in the classrooms for a number of sessions before beginning to formulate any ideas of how the finished script might be put together. Good educational scriptwriters are like good architects—they might have all sorts of ideas for designing beautiful buildings, but they must keep in mind the function of the building they have been asked to design, and be willing to tailor their ideas to the needs of that function.

Some Practical Guidelines

- Restrict the number of characters used—two or three at one time is enough. Too many characters confuse the audience, and it is very hard to establish any real identity for each character in, say, a half-hour format.
- Restrict "hard core instruction" to the main characters. If you wish to use peripheral characters in story lines or for songs and games, let these be supplemental to the main teaching message. Students are accustomed to accepting the main instructional message from an identified "teacher." This does NOT mean that the character(s) giving the instructional message have to appear in the program as teacher(s).
- Use "signature music" to announce the entrance of characters and to introduce various segments. Radio listeners count on musical cues to set the scene for what is to follow.
- Present the lessons in a recognizable, but alterable, format. An instructional radio series should see itself as an oral textbook. A good textbook uses a well-designed format, so that students using it soon learn that, for example, each lesson begins with a vocabulary lesson; followed by a story; followed by a practice exercise; followed by a summary. Similarly, the radio lessons should be structured around a clear format. Within that format there is room for considerable variation, and there is no harm in occasional divergence from the format, but it is unfair to expect a student (of any age) to glean the lesson from an irregular mix of ideas.
- Balance the format, making sure to combine strong teaching sections with "relaxation" sections of games, music, reinforcement, etc. For certain types of programs, it is highly effective to create what I call a "donut/donut hole" format, where the "donuts" are the tight instructional pieces and the "holes" (equally edible) are the relaxation or reinforcement times. The holes can be lifted and used time and again in many programs, as children love to hear their favorite songs or games or stories over and over again. (Donuts are small, round, sweet breads with a hole in the middle of them.) This type of format also makes it easy to make changes in a program that has been found wanting—it means perhaps the replacement of a number of donuts or donut holes without having to restructure and re-record the whole program.
- Keep sound effects subtle and appropriate. Don't be tempted to throw in a muted trombone every time a character yawns.
- Finally, if you want your radio instructional script to be a success, make sure it goes from your scriptwriter into the hands of a producer who knows how to use the medium of radio, and to actors who are trained in radio delivery!

Since the advent of television, there has been a tendency for us to forget the sense of hearing—except for soaking up background music—and concentrate almost exclusively on sight for receiving information. The ears, however, give as direct access to the brain as do the eyes, and radio should never be considered a little brother of television, or a lesser medium of instruction. Correctly understood and effectively used, radio can be the gateway to extended knowledge for millions of people throughout the world. ■

Esta de Fossard is Director of Adult Education at WCET Channel 48 in Cincinnati, Ohio. Her background is in radio instructional writing, a field in which she has been active both nationally and internationally.

Landless Villager Puts Video to Dramatic Use

Is video useful in communication for development? It depends on how it's used. Anil Srivastava of the Centre for the Development of Instructional Technology (CENDIT), New Delhi, India, tells how he and his colleagues took a chance which helped villagers to communicate honestly. He writes:

Video fascinates me. I know it to be an appropriate technology for communication for development. It is a more manageable and accessible technology. With little training people can learn to handle the equipment, and as they can see for themselves what they are recording on tape, they tend to learn fast from the experience. People tend to participate in making videotapes. And with every passing month the equipment and the consumable material are becoming cheaper.

I would like to mention our Saharanpur Community Video Equipment. We did not think that we had the answers and we did not have an ideology which seems to fit the situation. We felt that perhaps video was a channel, a platform for a dialogue with the community or within the community. They will have to decide what to do, we are just going to be the extension of the hardware. The problem is that this kind of work takes a long time to yield any results. A person involved in the problems of his community can instinctively present it much better. He gets to the heart of the matter while the 'outsiders' fumble around.

This was apparent to us the very first day we brought the portapak to the village we were working in. After recording the pretty images of rural countryside and poverty, we ran out of ideas. There came an old man, a Muslim and a grandfather with his granddaughter in his arms. He was a landless laborer in his fifties. He peered into the viewfinder, pointed the camera at the tree and the children and then when we played back what he had just recorded he was amused. He was a little more daring. He asked us whether he could take it and use it. I do not know what got into us but one of the group said 'go ahead.'

He vanished for more than an hour and we thought that was the last we would see of the portapak that we had borrowed in the first place. But he came back as he had run out of the tape and wanted it played back. What this landless laborer had done was that he went around accosting better-off farmers and asked them what they thought of the problems of poor landless laborers like him, what they are doing about it, and so on. It was a revelation for, as if peeling an onion, layer by layer, he brought out the core of hypocrisy. They all wanted to help their brothers but what can they do, there is not enough kerosene and the diesel and fertilizer and so it was obvious from the 'interviews' that no one is going to do anything for the poor, it is they who must help themselves. I could not have made that program nor could my colleagues because we would have been too impatient. We would have superimposed our views.

(The Centre for Development of Instructional Technology is a non-profit society, founded in 1972, which believes that communication accelerates social change. CENDIT works mainly in villages enabling people to use media for their own development.) ■

CENDIT, C11 Community Centre, Safdarjung Development Area, New Delhi 110016, India.

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A Communicator's Checklist

1 ***Educational Evaluation Methodology: The State of the Art,*** edited by Ronald A. Berk (Baltimore: The Johns Hopkins University Press, 1981), 168 pp. US $15.00 hardcover.

Many present-day books about evaluation are deeply rooted in the U.S. experience. This is rarely acknowledged explicitly but is immediately obvious to the reader who tries to interpret results or advice from the perspective of another part of the world. The U.S. framework is especially pervasive in books about educational evaluation, almost all of which assume a federally organized system and a huge enterprise involving millions of dollars annually.

Education Evaluation Methodology: The State of the Art, edited by Ronald A. Berk, is a collection of articles that were presented at a 1979 symposium at Johns Hopkins University. The authors are recognized authorities in the field and their presentations are all of excellent quality. However, the articles vary quite considerably in usefulness to practicing evaluators outside the U.S. context.

The editor defines evaluation as "the process of applying scientific procedures to collect reliable and valid information to make decisions about an educational program." He notes that the definition "reflects the traditional *quantitative paradigm* of evaluation as opposed to the *qualitative paradigm*" and, indeed, the contributions focus on quantitative methods for assessing program effects.

Individual authors have interpreted their task differently. Some have assessed broadly the state of their assigned area, while others have explored in depth a problem that seems particularly salient. Some have tried both.

Anthony Bryk and Richard Light contribute a chapter on "Designing Evaluation for Different Program Environments" that *very* briefly surveys some key design issues. They distinguish three types of program environment—regular school district, discretionary, and demonstration programs—and then limit their discussion to demonstration (pilot) programs. I found both the general discussion and their examination of an issue of particular interest to them—assessing impact when services are highly individualized—too brief to be of much use. However, I thoroughly endorse one of their general conclusions:

> The task of evaluation design has become a complex effort imposing much more than just technical decisions about fitting appropriate methods to evaluation questions. We are now talking about a process involving important political and social dimensions, as well as technical and fiscal resource considerations (p. 29).

The chapter on "Measuring Program Effects" by Nancy Cole and Anthony Nitko suffers from the kind of schizophrenia noted above. Some sections provide an excellent general discussion of crucial issues that must be addressed in choosing tests to measure educational outcomes. Other sections provide an interesting but often jargon-laden examination of particular aspects of test bias. Those for whom the more general material is particularly useful and relevant are likely to find the discussion of test bias heavy going.

In Chapter 3, William Cooley, Lloyd Bonds, and Bor-jiin Mao confront a technical issue—"Analyzing Multi-Level Data." The chapter addresses the problem of the level at which data should be aggregated (student, classroom, school, district) using a causal modeling framework. It is well written and will be illuminating to those who worry about such problems.

Robert Linn presents a useful discussion of another technical issue—"Measuring Pretest-Posttest Performance Change." This is an extremely important area because pitfalls attend *all* the commonly used methods for measuring growth in achievement and, despite considerable discussion of these problems in the literature, the methods are used unthinkingly in many evaluations.

Wolf's chapter on "Selecting Appropriate Statistical Methods" is, in my view, the least satisfactory in the book. He seems to view the process as (a) taking place *entirely* after the data have been collected and (b) consisting largely of trying to decide whether to use analysis of variance, analysis of covariance or regression analysis. I have no quarrel with many of his major points: the analyst should become thoroughly familiar with the data set by looking at descriptive statistics and scatter plots, each dependent variable should be analyzed separately, and so on. But the entirely *ad hoc* character of the discussion disturbed me.

Lois-Ellin Datta talks knowledgeably and comprehensively about using evaluation results, very much in the U.S. context. Finally, Daniel Stufflebeam tells us about the "Standards for Evaluation of Educational Programs, Projects and Materials."

So, who is this book written for and who is likely to find it useful? The editor (who, by the way, provides helpful introductions to each chapter) hopes that the book will serve as "a handbook for practicing evaluation methodology issues and problem areas." Well . . . a tall order. There is much of interest to any of these groups of readers but not too much for any one group. I suggest you ask your library to buy the book. And how about readers from other parts of the world? I particularly recommend the chapters on test design (Chapter 2) and measuring performance change (Chapter 4). Most of the other material will take some careful thinking to make it applicable situations around the globe. ■

Reviewed by Barbara Searle, an educational evaluator in the Department of Education of the World Bank.

2 ***Electronic Colonialism: The Future of International Broadcasting and Communication,*** by Thomas L. McPhail (Sage Library of Social Research, Vol. 126. Beverly Hills, CA: Sage Publications, 1981), 288 pp. Price: hardcover, US $20; softcover, US $9.95.

Thomas McPhail is professor of Mass Communication and Journalism at Carleton University in Ottawa, Canada. The book is the product of his work at UNESCO during the years 1978-80, and the book is at its best when the author describes the Belgrade and Paris UNESCO General Assemblies he attended. Some of the internal machinations and politicking about people's careers make interesting reading. McPhail devotes the first part of the book to a description of what is meant by the "new world information order" and "development journalism." These are sections that may benefit a novitiate to the debate.

But the book bogs down immediately in a resurrection of the *Four Theories of the Press* debate formulated by an American, Wilbur Schramm, and colleagues in 1956. To the Western press, freedom is inviolate; if we allow freedom of the press—even to the voices we abhor—eventually the truth will out. This is the classic libertarian and Jeffersonian concept of the press. It assumes, of course, that everyone has access to mass media channels. Indeed, at the time of the writing of the First Amendment, the owners of the press in North America were individuals. The book misses the chance to evaluate Third World contentions concerning the influence of corporate-owned media today.

McPhail's book disappoints on several counts. We should expect any new exegesis of the "new international information and com-

munication order" (to use the proper UNESCO term) to be both accurate and balanced. But in his attempt to be even-handed on the opposing viewpoints, McPhail loses the substance of the debate and presents a flaccid analysis.

McPhail makes his strongest point during his discussion of development journalism. He notes that the Third World move for "development journalism" (directing the information resource toward national development) should not be so casually denigrated by the Western press, which sees this as the first step toward censorship. After all, he points out, the Western press, too, is a development press and has, in fact, "successfully developed itself into an ideological arm of the capitalistic and free enterprise system."

The errors in attribution are unfortunate. There are, additionally, many typographical errors—a good example is "the preestablishment sentiment of the Western media" for "pro-establishment." A number of noted scholars' names are misspelled, and the U.S. International Communication Agency in 1980 is referred to by its former name, the United States Information Agency. Were it not for the errors, this book could be recommended for undergraduates and newcomers to the debate. ■

Reviewed by Howard H. Frederick, a doctoral student in international communications at the American University, Washington, D.C.

3 ***Bringing Women into the Community Development Process: A Pragmatic Approach,*** Marion Fennelly Levy. (Westport, CT., 1981, Save the Children), 47 pp.

This 47-page handbook discusses Save the Children's experience and efforts over the last 15 years to involve women in the programs provided by the Save the Children Federation in the developing world. The book, which begins with a refreshingly candid appraisal of Save the Children's assistance to women in recent history, covers a great deal of material in a thoughtful manner.

To the organization's credit, Save the Children took a hard look at its programs and its own internal organization and staffing patterns and realized the benefits women derived from its development efforts usually came as an afterthought. Women were invisible except when seen as an appendage to the hungry mouth of a child, or as a vehicle to carry water, or as a purveyor of medicine. Moreover, there were virtually no women development professionals on the field staff of the organization, a lack which tended to reinforce the invisibility of women. When economic development programs were promoted by Save the Children in villages with subsistence-based economies, the participants, trainers, organizers, and chief beneficiaries of the new programs were typically men, and it was clear that the newly generated income earned by these men was rarely, if ever, used for their families.

The handbook describes how Save the Children came to these hard realizations and what remedial steps they took. The author chronicles the changes in staffing in the organizational structure, and discusses how the changes complemented attempts to design programs specifically for the benefit of women. Case studies for women's programs in Upper Volta, Colombia, Honduras and Indonesia are presented.

Save the Children should clearly be lauded for its courage in asking difficult questions and its willingness to challenge traditional cultural attitudes toward women in the developing world. Perhaps the only criticism that can be made of this paper, and it is a relatively minor one, is that the case studies presented are not as candid as they could have been about the results of the programs. Upon close reading, the case studies reveal that the programs raised expectations of women and very little else—certainly they had little significant impact on their economic subsistence. After organizing women into community clubs, providing support for skills training in traditional home-centered activities such as cooking and sewing, and offering minimum financial assistance, Save the Children led the women to believe they could generate income. While the organizing and training were successful, the economic development goals often failed because there was no market for the products. The conclusion offered for the failure was not that the design of the program should be altered, but that the women should have known more about marketing and management in the first place.

This work is a valuable one and the lessons learned will undoubtedly be put to good use in the future. It is a sensitive attempt to make palpable changes in the lives of women in the developing world. It should be read by all persons concerned with development issues, and is highly recommended.

The booklet includes a bibliography on women in development in the Third World. ■

Available for U.S. $2.00, plus US $.50 for handling, by writing the Public Information Department, Save the Children Federation, Westport, Connecticut 06880 USA.

Reviewed by Arlene Horowitz, a program assistant in the Clearinghouse on Development Communication.

Note: ***Illustrations for Development,*** reviewed in *DCR* #34, is available from the Afrolit Society, P.O. Box 72511, Nairobi, Kenya.

4 ***Women and Media in Asia,*** edited by Timothy Yu and Leonard L. Chu (Center for Communication Studies, The Chinese University of Hong Kong, Hong Kong, 1977), 251 pp. US $5.00.

This book is a report of the Asian Consultation on Women and Media, a seminar held in Hong Kong in 1976. The meeting was sponsored by the Center for Communication Studies of the Chinese University of Hong Kong for communication educators and professional journalists of Asian countries. The report includes all the papers presented at the Consultation and a summary of the discussions. No attempt has been made, however, to synthesize the main lines of the discussion. The reader is presented with raw material and asked to plow through unaided. Fortunately, each paper is short and concise, which makes the task easier. Nevertheless, one wishes that the editors had set the meeting in its proper perspective and helped us capture its spirit.

When looking at the Consultation's agenda it is important to remember that it took place in 1976. This was only a year after International Women's Year and the Mexico City United Nations Conference on Women, which for the first time brought women's issues to the attention of the general public throughout the world. In 1976, consciousness raising was only beginning, discussions were passionate, and the limits of the debate were less defined. Agendas therefore tended to be wide open and to cover a lot of territory.

In this compilation, the first two series of papers consist of factual presentations on the legal and social status of women in various Asian countries and on the situation with regard to access to education and employment in mass media. Today, one would probably not devote as much time to this background information. In the last five years, the pool of knowledge on women's issues has greatly increased so that such basic facts and statements-of-the-situation are less useful.

The papers on education and access to media focus almost exclusively on media as a career for women: do women have equal opportunities for training, employment, and advancement in the media industry? Not surprisingly, it is generally found that although education opportunities are improving, job prospects for women in the media are not as good as those for men. Although the 1981 reader may be impatient with what now seem to be generalities, it is clear on reading the discussion in these papers that they provoked a lively exchange on such issues as women and work in general, the difficulty for women of assuming both career and family responsibilities, their ability to carry out the same assignment as men, prejudices, attitudes, stereotyping, etc.

(continued on next page)

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The second part of the Consultation consisted of four position papers which tried to cover several areas: portrayal of women's role in the media, women's contribution to national development through mass media, opportunities for training women for media careers and widening their involvement. In these papers the debate was at times broadened from the "media" level to the "communication" level but there was generally little time to probe. Issues such as the role of communication in development, media as an agent of change and a consciousness-raiser, the contribution that women can make through the media, and mass communication as a social process were raised but not analyzed in any depth.

The worldwide influence of the United States in both media and women's issues is very much in evidence throughout the book. One notes that of the 17 persons who presented papers during the consultation, 13 received training in the West, 11 of them in the United States. This is obviously a source of concern to the Asian participants and it should be noted by Americans who train specialists from other countries. Participants remarked that scholars trained in the United States often did not know how to apply their knowledge to the Asian situation, and that modern mass media techniques were too often imported from Western countries without sensitivity to the local situation. Asian communication students therefore face a double challenge: educating themselves in a different culture and then adapting their knowledge to their own environment.

The problem of transcultural influences is also evident with regard to the women's movement itself. During the discussion, the participants revealed the difficulty they had in understanding the development of the movement in the United States, and in finding the parallels and the differences in the situation of women in the United States and Asia.

In the end, the book provides some valuable historical material both on the subject itself—Asian women in the media—and on how the issue was approached as little as five years ago. It was used extensively in the worldwide study on "The Portrayal and Participation of Women in the Media" which was prepared by Margaret Gallagher for UNESCO (Paris, 1979) and therefore constitutes a primer in this field. Its main weakness lies in its attempt to cover too much ground too quickly, without attempting either to focus on main points or to give a sense of direction for future study or action. ■

Reviewed by Line Robillard Heyniger, consultant on international and women's issues, Montreal, Canada; international associate, Women's Institute for Freedom of the Press, Washington, D.C.

Small is Powerful

Microcomputers and microprocessors today are small enough to fit into a pocket, cost between US$ 100-300, and can run on small batteries. They are also on the order of 20 times faster and thousands of times more reliable than the early models first developed in 1946.

The advertising of IBM (International Business Machines) gleefully points out that an equivalent gain in the automobile industry would put the price of a Rolls Royce luxury sedan at about one nickel (US$ 0.05) in 1981.

The key development was the integrated circuit. Transistors are components of an electric circuit used to amplify, detect, or switch the flow of electrons. Their development in 1947 transformed electronics, as they made vacuum tube circuitry largely obsolete.

Current innovations continue to pack more and more circuitry onto chips. In 10 years, manufacturers expect to cram more than a million components into their units. With the addition of information processing capacities—computing functions—to silicon integrated circuits, the microprocessor is created.

Instructions on how a microprocessor will shunt electrons within the myriad of circuits, to perform logic functions such as calculation, are established beforehand. Function determines design and manufacture. This is called programming, and it is in the programming of microprocessors to apply their enormous flexibility for handling information that the future of microelectronics lies for developing countries.

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From Mexico comes a timely newsletter, in Spanish, *Síntesis Informativa,* published by the Instituto Latinoamericano de la Comunicación Educativa. Regional news about training courses, institutional activities, policy issues, and communication books in Spanish is regularly provided. Subscription information may be had from ILCE, Apartado Postal 94-328, México 10, D.F., México.

Mentioned in these pages earlier, *Video Educativo Rural (VER),* published in Spanish, in Lima, Peru, continues to be a useful vehicle for sharing the experiences of video used for education and training in rural Latin America. Users are urged to participate in the network. Contact CEPAC, Proyecto PER 76/003, PNUD-CENCIRA-FAO, Apartado Postal 4480, Lima, Peru, for further information.

"Women and the Media" is the focus of *ISIS International Bulletin* number 18. Articles on issues such as the image of women in the media, women and pornography, and media as manipulation, do a good job of raising consciousness in an area that is receiving increasing attention worldwide. For information on this issue of the *Bulletin,* contact ISIS, Case Postale 301, CH-1227 Carouge, Switzerland.

The International Women's Tribune Centre has published an interesting newsletter, in English and Spanish, on Women and Media. Project information, lists of organizations, titles of appropriate books and periodicals, production resources, UN policy news, and other useful information is presented in lively fashion. The Centre is located at 305 East 46th Street, New York, N.Y. 10017, USA.

Those of our subscribers who read Spanish may be interested in two series among the publications from the Fundación para el Desarrollo de la Región Centro Occidental de Venezuela (FUNDECO). One series of 11 publications is on Social Communication and Development (Comunicación Social y Desarrollo), the other series of 15 publications is on Social and Educational Research (Investigación Social y Educativa), from which we have sampled two: *Investigación sobre Radio-Foro como Método para Lograr Participación Campesina y una Efectiva Divulgación Agrícola* and *Análisis de Contenido de Mensajes Agrícolas en la Prensa y Radio Venezolana y su Utilidad Según los Campesinos del Estado Monagas.* Both of these studies show a thorough knowledge of communication theory, diffusion of innovation, conceptual models, and participatory research, and have useful bibliographies of Spanish works in these fields. A publication and price list may be obtained from FUNDECO, Apartado 523, Barquisimeto 3001-A, Estado Lara, Venezuela.

Also available in Spanish are the papers from the First Colloquium on Educational Television in Mexico (Primer Coloquio de Televisión Didáctica en México), sponsored by the Academia Mexicana de la Educación, and held in June 1980. Among 12 interesting papers are one on Mexico's new Rural Television Network, one on the Mexican experience using television for literacy, and one on the costs of educational TV. Mexico is obviously concerned with providing and improving basic education for all its population, as well as with relating education to production needs and skills. The papers collected here reflect this concern, and should be welcomed by other Latin countries with similar goals.

Available for US$6.00 from the Academia Mexicana de la Educación, Cerro San Gregório No. 6, Mexico 21, D.F., Mexico.

By Judy Brace

Introducing Hybrid Cocoa to Nigeria: Communications Help Persuade Farmers

by C.A. Ogunmilade

This article examines the adoption of hybrid cocoa in Ondo state in Nigeria. It identifies the motives that led to the decision to adopt the new crop and discusses some of the problems that were encountered in the process. It also illustrates the process and impact of communication, and examines the role of the change agents in the whole process of diffusion.

Ondo State, formally Ondo Province, is one of the 19 states that were created in Nigeria in 1976. It has an area of 18,165 square kilometers and a population of about 2.3 million, mostly farmers. With its tropical climate, it produces more than 60 percent of the Nigerian cocoa. Cocoa is the mainstay of the state's economy, and is second only to petroleum as Nigeria's largest export.

Before the introduction of the hybrid cocoa in the state in 1954, the farmers planted native cocoa. The trees yielded abundant fruits for eight to ten years after planting, but productivity quickly declined thereafter. The old cocoa trees became tall, and the scattered fruits on them were very difficult to reach during harvest. In the three years from 1950 to 1953, production dropped appreciably, and income of both the farmers and the government fell. The government was concerned, and took action.

The then-Minister of Agriculture and Natural Resources for the Western State of Nigeria, who incidentally came from the state, undertook a cocoa tour of the West Indies and Brazil in 1954. He and his colleagues came back to Nigeria with sample fruits, pictures, and demonstration packages of another type of cocoa, known as the "hybrid cocoa," for which the Ondo State of Nigeria is well known today. What was responsible for the ultimate decision to adopt the hybrid cocoa, a crop that up to 1954 was foreign to Nigeria? Were alternatives considered? Were there models to guide the government in its decisions concerning these issues? What role did communication play in the process?

First, there were many models to choose from, and most of the experts in the Ministry of Agriculture and Natural Resource, architects of the innovation, had studied in Italy, Brazil, the United States, or Canada. Their initial approach was similar to the Research, Development, Diffusion, Adoption Model postulated by Clark and Guba. The government asked the Cocoa Research Institute of Nigeria (CRIN) to look into the problem of low yields from native cocoa, perform experiments on both the old and the new crops, and advise the government on its findings. The Institute did experiments and concluded that: the hybrid cocoa would do as well as the native cocoa in Nigeria; that it would mature in three years as opposed to a minimum of five years for the Nigerian cocoa; that the hybrid was bigger and more productive; and that it could capture the world market in the future.

There were also suggestions that the farmers should be given loans to reactivate their own cocoa, crops which had been passed on from generation to generation. Some planners considered the hardship the innovation would bring to the old farmers, and there were government functionaries who were skeptical about "this foreigner from Brazil." At this time, the campaign had not got to the farmers. However, government decisions on the matter, and its eventual follow-up, combined many principles, models, and forms of communications, each useful at a particular stage. At times, a combination of several of the models was used.

Communications Campaign

Farmers were made aware of the new cocoa through the rediffusion programs broadcast on a special frequency, government information vans, mobile cinema shows; through head chiefs and councillors; and at times in churches and mosques. The government first performed the experiments on its demonstration farms, planting the seedlings and nursing them for about a month before transplanting them. Films and pictures of the processes of planting and growth were then shown in all the local towns and villages, and farmers were in turn encouraged to make their own nurseries. In addition, half-hour programs on agriculture were presented on the radio rediffusion three times a week to create awareness, sharpen the interest of the farmers, and highlight the advantages of adopting the hybrid cocoa. Individuals and groups were contacted and discussions went on at the village level. In effect, no single model was adopted exclusively, and interpersonal communications were stressed.

Initial Resistance to New Crop

Initially, the innovation encountered a lot of resistance. There was opposition from farmers above the age of 45 who were no longer strong enough to cultivate new crops. They wanted the government to reactivate their old crops instead. Other opposition came from the few rich farmers, whose prestige was based on their control of the largest holdings of cocoa in their respective villages. They feared that in the "new age," when everybody would have to start from scratch, their positions would be threatened.

Equally difficult for the farmers was the idea that the dying cocoa trees should be cut down and replaced with hybrid cocoa seeds or seedlings. The farmers considered not only the hardship that such deliberate cuts would entail, but also the "psychological pain" of destroying what was handed down to them by their fathers—crops they wanted to hand over to their own children some day.

In Ondo State, there were several categories of adopters. The innovators were few, but very influential. They were, curiously enough, teachers and other professionals who considered farming a hobby. The early adopters were the opinion leaders. Both the innovators and the early adopters were mobile, cosmopolitan, adventurous, and open to external influence.

Roles of Different Groups

More remarkable in the process of change was the role of the formal and the informal groups. These group members were not the early adopters; they came in late but formed the majority. They were mostly farmers and, very often, they made far-reaching political and economic decisions. The groups between the ages of 25 and 35 were unique. They wanted success, and shared common goals, attitudes, and approaches to life. When they heard about the hybrid cocoa, they invited the Ministry officials to educate them about the new product. The agricultural assistants, who were really the change agents in the districts, took over from there. They made demonstration beds in the villages, and planted the new cocoa seeds and nursed them. Early in the morning and again in the evening, farmers were invited to watch the Agricultural Assistants. They would ask questions, and would take some seeds away for planting. The State Ministry of Information was very useful too. Information workers took beautiful pictures of the new crop, and displayed posters to emphasize the advantages of adopting the new cocoa.

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Development Communication Report, published quarterly by the Clearinghouse on Development Communication, has a circulation of over 6,000 development professionals. Subscriptions are available free of charge to readers in the developing world.

A center for materials and information on important applications of communication technology to development problems, the Clearinghouse is operated by the Academy for Educational Development, a nonprofit planning organization, and supported by the Bureau for Science and Technology of the U.S. Agency for International Development as part of its program in educational technology and development communication.

Readers are invited to submit typed manuscripts of no more than 1000 words, and to send in photographs.

Technical Assistance Spans the Pacific:
VITA Volunteers Share Energy Information by Satellite

by Gary Garriott

For more than twenty years, Volunteers in Technical Assistance (VITA) has sent information on low-cost technologies by mail to thousands of requestors, primarily from the developing countries, as well as provided on-site consultancies and project management. Approximately 4,000 volunteer experts throughout the world contribute their time to these activities. Recently, VITA has begun experiments which involve sending information by interactive media to supplement mail services in the hope that immediate information transfer will be more timely, and, therefore, more likely to be used in actual development activities.

Teleconferences Highlight New Program

One such experiment currently being pursued by VITA is a series of two-way audio teleconferences on renewable energy technologies beamed to potential users in the Pacific region via the PEACESAT system. PEACESAT is a consortium of government and educational institutions that employs NASA's Application Technology Satellite ATS-1, launched in the 1960's and now dedicated to public service use for its remaining lifetime. Approximately 20 ground stations throughout the Pacific have been installed linking such locations as Saipan; Lae, Papua New Guinea; Wellington, New Zealand; Rarotonga, Cook Islands; and other sites within these general boundaries. Since ATS-1 is a high-powered, global beam satellite and uses uncomplicated VHF (very high frequency) transmitting and receiving equipment, earth station equipment is inexpensive and several earth stations have been installed for under a thousand dollars each. Portable operation from remote rural areas is also possible.

Volunteers Coordinate Conferences

Under its AID-supported Renewable Energy Program, VITA has thus far used home office staff and volunteers located throughout the geographical U.S. to produce and coordinate a series of conferences on the following topics: solar hot water heating, wood gasification, woodstoves, wind-electric systems, and bio-gas. Second conferences on wind-electric systems and cookstoves have also been held. Depending on the location of staff and volunteers making presentations, either conference calls or simple long-distance calls are made to the uplinking ground station terminal. The calls represent the only cost to VITA (other than mailing literature).

Experience thus far shows that it is quite easy for even first-timers on the conference network to get used to the idea of communicating via satellite with people 9,000 miles away. Only "simplex" operation is possible; that is, one person talks at a time and must end his or her transmission with "over to Suva," for example. Sessions are "chaired" by whatever terminal initiates the conference or by the terminal where the VITA participants are. "Chairmen" request reactions and comments from participating terminals in turn. Since PEACESAT is relatively unsophisticated in terms of hardware, the need for frequent repetition and signal checks and the informal nature of the sessions themselves provide an unthreatening environment in which newcomers almost instantly feel at ease.

Future topics are selected during conferences themselves or during weekly scheduling sessions. A former VITA employee, now at the University of Hawaii, is an operator at the Honolulu terminal and provides necessary logistical continuity with stations and VITA as well as feedback on the usefulness of the material presented. Uplinks are accomplished through PEACESAT terminals in Santa Cruz or Honolulu. A quasi-private station in Florida has also been used for accessing the network, and VITA is studying the possibility of acquiring a low-cost terminal of its own if conferences continue over a long period of time.

Preplanning Vital to Success

Since the sessions are primarily technical in nature, experience to date indicates that pre-conference written materials are essential to a good exchange of information. Topics are usually set a month in advance to allow time for pre-conference mailings of subject materials. Terminal managers distribute this technical material to interested parties (thus far, mainly mid-level government officials and planners, development technicians, and university personnel). Participating VITA staff and volunteers have also previously studied the material. Typically, a conference consists of short three- to five-minute presentations on the subject by staff and volunteer experts (together with other Pacific conferees who may already have expertise on the topic) followed by questions and answers. Post-conference information is also forwarded to participants when appropriate.

A continuing concern is how to assure that participants are able to use the information for construction of actual projects. One way seems to be to encourage active participation of groups that have a particular technological focus. For example, a Pacific-wide Women's Interest Group has begun a series of conferences on smokeless stoves that only require slight modifications for greater efficie[illegible] and reliability. Increasingly, the women p[illegible] vide the VITA staff and volunteers with technical information that they did not previously possess, information which is then made part of VITA's technical library for reference and distribution to future Pacific island requestors.

Focus on Specialized Objectives

VITA is also designing conferences with specialized objectives. One type will be for "advanced" participants who are already knowledgeable in a certain technology and need specific and specialized information. In addition, "Resource Acquisition Seminars" will provide administrators with the knowledge of existing foreign development resources. VITA recently surveyed over 500 organizations worldwide that promote the use of appropriate technologies and found that in addition to information (primarily on other projects), short-term technical consultations and financing (particularly in small, manageable amounts) were important for project implementation. We believe that such seminars on how to tap resources will help Pacific planners put together appropriate resource packages for their development ne[illegible]

VITA hopes that the current telecon[illegible] ence series will provide Pacific governments and groups with timely information on renewable energy in an immediately useable, low-cost form—certainly growing and critical concerns of energy-dependent island economies. The vast expanse of territory, rising air fares, and mail service delays will increasingly enhance the value of teleconferencing as an alternative to jet travel.

Basis for Replicating Project

In this light, it is indeed unfortunate that there are presently no low-cost alternatives to PEACESAT when ATS-1 finally dies or is removed from service, possibly within a year. There is obviously a sound basis for replicating the PEACESAT experience in public service sectors of other developing countries as long as operating costs can be kept low and hardware uncomplicated. The marriage between low-cost renewable energy technologies and "appropriate" satellite conferencing technologies is natural, and, we believe, one that could have wide application for struggling economies everywhere. ■

To obtain further information con[illegible] VITA Inc., 3706 Rhode Island Ave., [illegible] Rainier, Maryland 20822, USA.

Gary Garriott is a senior technical advisor at VITA with a special interest in renewable energy and technology transfer.

On File at ERIC

International communication problems, the effects of television dependence on political views, and developments in the area of broadcasting satellites are addressed in the reports reviewed in this column. All are available in microfiche from the ERIC Document Reproduction Service (EDRS), P.O. Box 190, Arlington, Virginia 22210, USA. Some of them are also available in paper copy.

- *The Media Crisis.* Miami, Florida: World Press Freedom Committee, 1980, 114pp. (ED 193 718)

Those who have been involved in UNESCO debates on the media and on the New World Information Order offer comments on the proposals of the MacBride Commission, a group appointed by UNESCO to study the problems of international communications. Specific topics addressed include (1) the right of access to private and public sources of information; (2) special protection for journalists; (3) licensing of journalists; (4) employment of journalists by intelligence agencies of any country; (5) a proposed international center for study and planning of information and communications to be established within UNESCO; (6) private ownership of news media; (7) problems created by advertising; and (8) taxing of transnationals. Available from World Press Freedom Committee, Miami Herald, 1 Herald Plaza, Miami, FL 33101 (postage only), or EDRS in microfiche for 91¢ or paper copy for $8.60 plus postage.

- Becker, Lee B. and Fruit, Jeffrey W. *The Growth of TV Dependence: Tracing the Origins of the Political Malaise.* Paper presented at the annual meeting of the International Communication Association, Acapulco, Mexico, May 18-24, 1980, 29pp. (ED 196 082)

A heavy dependence on television news has been linked by research with lower levels of knowledge about the political system and negative evaluations of that system, i.e., political malaise. This paper uses data from three different sources to examine more closely the shift away from print toward dependence on television for news, to determine the linkage between needs and dependency, and to determine changes in the linkage between needs and dependency over time. In general, it is expected that an examination of the needs of the audience will reveal some causes of the increased dependence on television. It may be that viewers watch television in part to avoid conflict, yet the conflict included in news programs is the very thing producing their frustration. Available from EDRS in microfiche for 91¢ or in paper copy for $3.65 plus postage.

- Curran, Alex. *Direct Broadcasting Satellites—Myth or Reality.* Paper presented at the annual meeting of the International Institute of Communications, Ottawa, Canada, September 8-11, 1980, 14pp. (ED 192 405)

Pointing out that, contrary to expectations, there is still no fully operational direct broadcasting satellite system 23 years after the launching of the first satellite, Curran poses several questions. Is there a perceived need for such a system? Is the technology available at cost-effective levels? Has that technology been adequately tested? Would the system create more problems than it would solve? He suggests that there is a need for direct broadcast satellites to serve large areas of low population density, and that the availability of the technology at cost-effective levels has been demonstrated by experiments and studies; e.g., low power-level satellites have proved to be especially cost effective in Canada. He cites three satellite launches—HERMES, serving Canada, the U.S., and Australia; URI, serving Japan; and ANIK-B, serving Canada—and discusses new projects being considered in nine countries. He concludes with a look at some problems arising from the fact that satellite signals cross national borders. Available from EDRS in microfiche only for 91¢ plus postage.

- Maeda, Jiro. *Direct Broadcasting Satellites in Japan.* Paper presented at the annual meeting of the International Institute of Communications, Ottawa, Canada, September 7-11, 1980, 26pp. (ED 192 404)

This discussion of the development and use of broadcasting satellites in Japan describes the medium-scale experimental broadcasting satellite, YURI, which was launched by NASA in 1978. Experiments with YURI in several different areas—basic technologies in the broadcasting satellite system, satellite control technologies and operational control techniques, and the reception of radio waves from a broadcasting satellite—are reported to have shown favorable results and to have suggested that practical applications of broadcasting satellites are technically feasible within the foreseeable future. A recommendation is made to the Space Activities Commission of Japan that an operational broadcasting satellite be launched in 1983, prior to the planned launchings of space platforms in 1985 and 1990. Objections of commercial broadcasters who fear disruption of regional broadcasting by broadcasting satellites are also presented. Available from EDRS in microfiche only for 91¢ plus postage.

Barbara B. Minor, Publications Coordinator, ERIC Clearinghouse on Information Resources, School of Education, Syracuse University, Syracuse, New York 13210, USA.

Keeping Current: Periodicals to Note

We would like to draw our readers' attention to some of the communications periodicals that are received in the Clearinghouse.

URTNA Review/Revue de l'URTNA is a bi-annual French-English communications journal, published by the Union of National Radio and Television Organizations of Africa (URTNA). This organization promotes, develops, and coordinates radio and television activities in Africa. The *Review* features organizational and conference information, and a recent issue contained a lengthy report on rural radio in Anglophone Africa with useful, country-specific information. For subscription information, contact *URTNA Review,* 101 rue Carnot, B.P. 3237, Dakar, Senegal.

Interface is a bi-annual journal, in English, published by the Department of Communication and Journalism, Osmania University, Hyderabad 500 007, India. The journal tries to strike a balance between academia and the community, international communication issues and national media concerns. Contact the Editor at the above address for subscription information.

Also from India comes the interesting monthly bulletin of the Research Institute for Newspaper Development, *RIND Survey.* It contains technical printing and equipment information, discussions of policy issues, and book reviews. For subscription information, contact CGK Reddy, 38 Pantheon Road, Madras 600 008, India.

A newsletter that can be relied on to give clear coverage to current issues of international communication policy is the *Chronicle of International Communication.* Published monthly by International Communication Projects, Inc., in cooperation with Temple University's School of Communication and Theater, the *Chronicle* regularly provides information on transborder data flow, the debate on the New World Information Order, education issues and conferences, as well as brief book reviews. Subscription information is available from ICPI, P.O. Box 2596, Washington, D.C. 20013, USA.

An informative and carefully edited journal is *Media Development,* published quarterly by the World Association for Christian Communication, in London. Recent lead articles have focused on alternative news and information services, the New World Information Order, and Latin American grassroots structures of communication. Good coverage is given to media's use for social service throughout the world, and abstracts in Spanish are frequently provided. WACC offices are at 122 King's Road, London SW3 4TR, England.

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Focus on Women

Three years ago, the report from an international workshop held in Bangkok by the Asian and Pacific Centre for Women and Development stated that the media were "actively contributing to corroding the dignity of women. . ."

A new film produced by the United Nations (UN) Department of Public Information reviews the image of women as shown in film and TV in India, Egypt, and the Dominican Republic. The film takes a strong stand against injurious stereotypes and supports efforts by women to assume responsibility for the improvement of their own lives.

India's vast film industry perpetuates the notion that women's happiness comes from "submission to the right man." In the development of this theme, Indian films traditionally provide escapism and vicarious materialism as well as predictably happy endings. Their content does nothing to enhance the dignity of women. Not suprisingly, the technical functions of film production rest exclusively in the hands of men. Only now is the National Film Institute of India beginning to train women in camera, sound, lighting, editing, and other technical skills.

A paradox exists in Egypt's busy world of television production. Because radio and television salaries in government broadcasting are lower than those in the press or in other countries' broadcast media, a large proportion of the jobs are held by women. Electronic engineering is considered a "feminine" profession, broadcasters are usually women, and the head of the country's TV programming is a woman. All the more striking, then, is TV's perpetuation of old stereotypes of the role of women, a diet fed daily to an audience of one million families. A social researcher interviewed in the film discusses her study of women's images portrayed, and finds that in the immensely popular soap operas, when the husband strays—threatening the stability of the venerated family—the disruptive cause is typically a female university student or a working woman.

In striking contrast to the first two, the final segment of the film shows programming by, for, and about women who are making an effort to change and improve the conditions of their lives. It features a TV program showing women making decisions and taking charge. Although the weekly half-hour show, "Diferentes pero Iguales," presents many public service types of activities (see *DCR* #25, January 1979), the film documents only one: a group of rural women who have pooled their resources (without the support of the men of the community) to buy a herd of goats. Their determination gives them new confidence and skills. ■

Reviewed by Judy Brace

Focus On Women *(color, 16mm, 28 min.) is available in English, Spanish, and French. In the U.S. it can be purchased for US $300 from the United Nations, Room 807, New York, NY 10017, USA, attention Ms. Brooke Landis; to rent, it is available for US $30 from the New York University Film Library, 27 Washington Place, New York, NY 10003, USA. In Canada, the film is available from Marlin Motion Pictures, 47 Lakeshore Rd. East, Port Credit, Ontario, Canada L5G 1C9. In other countries, to borrow the film, contact a United Nations Information Center, or any of the UNDP film libraries.*

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At the adoption stage of the process of diffusion, the change agents were very effective. They came from the Yoruba land, spoke the language of the people, interacted freely with them, understood the intricacies of their social system, and were prepared to respect them. The farmers in turn gave respect and recognition to the Agricultural Assistants.

However, all was not smooth sailing. It was not easy for them to work with individual farmers. First, there were only a few change agents, and part of their time was spent making field reports at their Ministry headquarters. Second, the farmers themselves were not easy to find except on weekends. Most of them slept on the farms from Monday to Friday; others went to the farms very early in the morning only to return late at night. The change agents could not meet them on the farms because, at certain times of the year, the bush paths were risky, muddy, and impassible, and the farms were far apart.

Laggards and Reluctant Old Men

The opinion leaders were very effective. They were part of the system, much respected and loved, widely traveled, and they had embraced the innovation much earlier. Since their new crops were doing well, they had little difficulty in convincing others, except those who were lazy, to follow suit. The lazy farmers and the old men were the greatest headache for the agents. The latter stuck to their native cocoa until lesser yields drove them to frustration and unhappiness. The members of this group could be rightly referred to as the laggards.

1960 was a crucial time in the adoption of the hybrid cocoa because some of the early plantings had started to bear fruits on a large scale. People began to see that the hybrid cocoa was better, and the young farmers were taking more money home than the elders who had earlier dominated the market. Tongues started to wag.

Mobile vans, mainly organized and funded by the Ministry of Information, mounted campaigns of words and posters in all the important places in the state. Pictures of farmers nursing the young plants, spraying the cocoa pods, and enjoying the fruits of rich harvests, were made available. Programs such as Cooperative Half Hour, *Agbe Onije Ojumo* ("The farmer who works hard will eat every day"), and *Exe Agbe* ("The f[illegible]er's gain"), came up regularly on the re[illegible]sion networks.

Lives Changed By New Cocoa

The new crop was better from the standpoint of yield, quality, and productivity. What were some of the effects of this improvement? Students who had earlier suffered as a result of lack of funds could go back to school. New and beautiful houses sprang up to replace some of the old dilapidated ones. People acquired transistor radios, and later, televisions. Farmers could now buy what they needed, and more people had money. New businesses, such as trading, and arts and crafts, developed. As people became more mobile, social interaction increased.

Traditionally, the few young men that had cocoa had inherited it from their fathers. The old men ruled the towns and villages because they controlled the source of wealth, and thus had influence and power. But by the 1960's, the old order had changed, yielding to the new, and this was evident in almost every aspect of life.

However, the adoption of the innovation brought with it many social problems. St[illegible]ing became more common. Young men [illegible] had no cocoa resorted to theft to meet the challenge of the new situation. Litigation abounded as a result of arson, public fighting, and seduction of other people's wives. Many young men became reckless as a result of drunkeness, and had fatal accidents on their vehicles.

Perhaps most significant was the erosion of the traditional system of settling disputes and quarrels at the feet of elders. Elders no longer had power, because they did not control the purse strings. Young men took their cases to court, rather than presenting them before the elders.

Some of the above-mentioned points were indirect but very important effects of the innovation. However, for most people, for most organizations, and even for the government (by way of more revenue), the adoption of the innovation brought about positive change. Without the use of a persuasive and coordinated communications campaign, which in this case relied primarily on interpersonal communications, it is doubtful whether the new cocoa could successfully have replaced the old in such a short time. ■

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As we have seen, agricultural information is needed by a wide range of users, from administrators and financiers to research scientists and extension workers. Frequently it is not practicable for international services to be aimed directly at these user groups, particularly in the case of the farmer himself, the end-user of much agricultural information.

It is instead necessary to have intermediaries who are responsible for repackaging the information in line with local needs and conditions. For example, the role of the extension officer or agricultural adviser in transferring the results of laboratory and field trials into tangible benefits cannot be too highly emphasized. Such benefits include increased crop yields and improvements in the well-being of the rural population. The agent's local knowledge of ecological and social constraints is invaluable in selecting the appropriate information and presenting it in the appropriate way.

Specialized Centers

In recent years many specialized agricultural information centers have been established in developing countries. These consist of the information departments of both the international centers financed by the Consultative Group on International Agricultural Research (CGIAR) and research or training centers set up by regional or national governments. These information centers have tended to concentrate either on one specific crop (or small group of crops) or on the particular agricultural priorities of their country or countries in their region.

These centers are ideally placed to act as intermediaries, accessing international systems and selecting, reprocessing, and repackaging material for dissemination to their own users. This process should not only include the usual selective dissemination of information and retrospective search services, but also such tasks as the regular production of specialized collections of abstracts or indexes as is done by the Cassava Information Center at the Centro Internacional de Agricultura Tropical (CIAT) in Colombia, and the Agricultural Information Bank for Asia (AIBA) in the Philippines.

The production of newsletters and bulletins, the organization of translations and the distribution of up-to-date reviews on specific topics for extension workers can also be useful and much-appreciated functions of these specialized centers.

The establishment of national, regional, and international information networks is essential for their successful operation. This is an area in which fruitful collaboration between developing and industrialized countries should be sought. However, it should always be remembered that the system developed must be appropriate to the needs of the users and the conditions prevailing in the country in which it will be used.

In some developing countries computer systems have been successfully established, but a computer should not be used just for its own sake. All too often grandiose schemes for interconnected networks have been proposed, and sometimes even implemented, without any basic information science groundwork to discover who is the user, what are his or her needs, and whether the system will provide answers in a usable form. It is far better, in some cases, to develop simple systems based on photocopies of contents pages, such as the East African Literature Service and the CIAT Contents Pages in Agricultural Science. These are effective and are extremely popular with users.

AGRIS, CAB, ATA

Of the many information services available, only one attempts to serve all user groups with a "comprehensive inventory of world-wide agricultural literature," and that is the FAO International Information System for the Agricultural Sciences and Technology (AGRIS). Other services have more limited aims. They may provide "a world agricultural information service" covering material of "scientific importance" as does the Commonwealth Agricultural Bureaux (CAB) or, as in the case of Abstracts on Tropical Agriculture (ATA), "a selection of material of practical interest to agricultural development and extension workers in tropical and subtropical areas."

Many suppliers also offer selective dissemination of information (SDI) services. This is another way in which the data base may be broken up into smaller sections more relevant to a specialized center's needs.

Bibliographies and reading lists, compiled either on specific request or as a series of publications from the major suppliers, can also be extremely useful products for specialized centers.

The alerting function of international services is all very well, whether by means of journals, specialized bulletins, SDIs, bibliographies or magnetic tapes, but what the user really wants is information; a bibliographic reference alone often will not suffice. The data base supplier can help in two ways: by including informative abstracts in his publications, and by providing a document delivery or photocopying service.

Abstracts

Well-presented, informative abstracts can replace the original documents to some extent. This is an extremely important aspect of the provision of information in the developing countries, but even in industrialized countries users prefer SDI services which include abstracts to those which do not.

Summary

International information services must support the specialized centers and promote their development into real "centers of excellence," so that they become *the* place in the world for information on their specialization. (This is already the case with a number of them.) In many instances, improvements in internal and external communications and coordination of services within countries or regions are vital if national and regional centers are to achieve these aims.

Agriculture will maintain its priority position in the economic and social development of most Third World countries and the need for information services will increase. It is only by close cooperation between developing and industrialized countries that this challenge can successfully be met. ■

The organizations mentioned in this article may be contacted at the following addresses:

AGRICOLA: The United States Department of Agriculture National Agriculture Library, Beltsville, Maryland 20705 USA

AGRIS: FAO International Information System for the Agricultural Sciences and Technology, AGRIS Coordinating Center, FAO, Via delle Terme di Caracalla, 00100 Rome, Italy

AIBA: Agricultural Information Bank for Asia, The University of the Philippines, Los Baños, Philippines

ATA: Abstracts on Tropical Agriculture, Koninklijk Instituut Voor de Tropen, Asdeling Agrarisch Onderzoek, Advisory and Documentation Division, Mauritskade 63, Amsterdam, Netherlands

CAB: Commonwealth Agricultural Bureaux, CAB Secretariat, Farnham House, Farnham Royal, Slough, SL2 3BN, England

CGIAR: Consultative Group on International Agricultural Research, Secretariat, 1818 H St. N.W., Washington, DC 20433 USA

CIAT: Centro Internacional de Agricultura Tropical, Apartado Aereo No. 67-13, Cali, Colombia, SA

Peter Thorpe is the head of the Agricultural Information and Documentation Section, Department of Agricultural Research, Royal Tropical Institute, the Netherlands. This article is taken from a paper contributed to the Fortieth Congress of the Federation international de documentation (FID), held in Copenhagen in August, 1980.

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Information Systems

New Resources for Agricultural Information Being Developed Around the Globe

by Peter Thorpe

In place of a "Dilemma in Country X" for this issue, we are reprinting an article from Agricultural Information Development Bulletin. *The author presents a communications problem familiar to many: where can people in developing countries with scarce library resources turn for information; in this case, agricultural information? The author then, in effect, responds to that question by discussing information systems, offering practical suggestions, and furnishing a list of information resources.*

Note: DCR *cannot continue its "Dilemmas in Country X" feature without contributions from readers. We urge subscribers willing to share development communication dilemmas from around the world to send their dilemmas to* DCR. *As always, anonymity will be preserved on request.*

The acquisition, processing and dissemination of information is an essential part of the development process.

Different kinds of information are required by many different kinds of users: government administrators, development bank officers, factory and plantation managers, training and extension workers, university staff, research scientists, development consultants and, last but not least, farmers themselves. They all need the right information, at the right time, so that the right decisions can be made.

The introduction or further expansion of information services in developing countries is beset by a number of problems, the most important of which are identified below.

Personnel

In most developing countries there is currently a great shortage of trained library and information scientists. Fortunately, international organizations, such as the Federation international de documentation and UNESCO, have realized this problem and have given it the priority it deserves in their programs.

A fundamental problem in many cases is one of attitudes. For example, the information scientist is frequently mistaken for an untrained library clerk by users; all too often this feeling extends to management and is reflected in low status and salaries—factors hardly likely to attract newcomers to the profession.

Communication

Even in the industrialized countries, information services in agriculture have to deal with numerous small research stations, training centers and so on, scattered throughout the country, often well away from centers of population and national library resources. In developing countries this problem is frequently exacerbated by poor telephone and postal services and inadequate road or rail links.

This isolation not only delays postal and other communications, but it is also difficult for young, newly trained information workers to develop their full potential as they are cut off from their peers in this way.

Organization

The uncoordinated, piecemeal development of government institutions and frequent reorganization in many developing countries have resulted in duplication of effort and dissipation of resources. The "coordination of all services involved in the provision of information" as laid down in the UNESCO National Information System (NATIS) guidelines proves extremely difficult when information dissemination is the task of so many different ministries and departments.

Resources

Despite recent improvements in library holdings in some places, most developing countries suffer from a lack of easy access to many important books and journals. When a journal is available it may well only be held in one or two libraries in the country.

Another problem is language. The dominant position of European language publications in tropical agriculture tends to create a language barrier for many users in developing countries where translation facilities are usually not easily available.

Finance

The severely limited financial means of most libraries and information centers in developing countries is self-evident. The problem is made worse by the exchange control regulations of many countries and the relatively high cost of journals, books, and information services from the industrialized countries.

Role of information services

It is against this background that we have to consider the role of the international information suppliers. In fact, the picture is generally not quite as bleak as it has been painted, since usually not all these problems are equally severe in all countries.

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Development Communication Report

Clearinghouse on Development Communication

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Satellite Communications Reinforcing Cultural Identity in Canada's Northernmost Reaches

by Lyndsay Green and David Simailak

Since September 1980, Inuit people in six Arctic communities have been talking, teaching, and transmitting TV programs over the Anik B satellite. The communications project, called "Inukshuk," is sponsored by Inuit Tapirisat of Canada (ITC), the national organization which represents Canada's 25,000 Inuit. Inukshuk, meaning "likeness of man," is the name for the stone cairns that marked the nomadic routes of the Inuit, and served as one of the first communication aids. With the Inukshuk Project, it is ground stations instead of rock formations that will allow the Inuit to plot their course and map their future.

Inuit have inhabited the Canadian Arctic for the last 5,000 years. They were formerly a nomadic people who lived in small groups and spread over the land to make the best use of scarce resources. Their home is the "Barrens," the frozen land north of the tree line. Popular usage has referred to the Inuit as "Eskimos," but they prefer their own name for themselves, a word meaning "the people" in their language, Inuktitut.

Canada's 25,000 Inuit live in 57 communities stretching some 3,000 miles from the Mackenzie Delta in the Western Arctic to Labrador. Today, the Inuit race, which has survived under the most adverse conditions and in the most inhospitable of environments, is facing the strongest threat to its continuing existence. The survival of the language and culture of the Inuit is being threatened by the dominant North American culture which has pervaded all facets of Inuit life.

Inuit are determined to endure as a people. They see in communications technology the potential to create a support system for Inuit life. Through the offices of Inuit Tapirisat of Canada they have launched an ambitious interactive satellite project to test their aspirations. In order to fully understand the Inukshuk Project it is first necessary to understand the history of Inuit communications activity and the environment within which they are working.

Inuit Tapirisat of Canada

Inuit Tapirisat of Canada, meaning "Inuit becoming united," is a non-profit organization dedicated to preserving the culture, language, identity, and way of life of the Inuit, and to helping them establish their rightful place in a changing society. One of its organizational aims is to improve communications among Inuit settlements. The organization was founded in 1971 when a committee of Inuit decided it was time for the native people of the Arctic to speak with a united voice.

In August, 1975, ITC established a program to research Inuit needs for improved communications and to carry out specific projects to meet those needs. Initial research identified communications priorities as *reliable telephone service, Inuktitut language radio and television programming,* and *portable HF radio* (trail radio) for use on the land.

As Inuit have become increasingly responsible for their own economic, political, and social development, other technologies have taken on a new importance. Inuit organizations consider telex, facsimile, and teleconferencing capability to be essential tools in the fast-paced worlds of finance and politics. Tele-medicine and tele-education are viewed as vital to a widely dispersed population with rapidly expanding medical and educational requirements.

ITC's efforts in the past five years have been focused on changing the structure of the communications systems in the North to better reflect the language, culture, and priorities of the people that it serves. The Inukshuk project is another step in this program.

The Northern Communications System

One of the Canadian government's major rationales for embarking on a domestic satellite program was the benefits it would bring the North. The first satellite designed to provide commercial telecommunications services, launched in 1972, was called Anik, an Inuktitut word meaning brother.

That satellite system is now bringing high-quality telephone service to Inuit communities, thereby providing much-needed inter-community ties. But, in addition, it is transmitting 16 hours a day of southern, English-language television programming through the services of Canada's national network, the Canadian Broadcasting Corporation (CBC). Out of 112 hours of weekly television programming, less than one hour per week is in the Inuktitut language. (A CBC survey found that 9 out of 10 people of the region served own a television set, and watch an average of 3.5 hours of television per day.)

(continued on page 2)

In this issue . . .

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(continued from page 1)

Inuit feel that the television service, which includes programs like "Charlie's Angels" and "Edge of Night," is posing a powerful threat to Inuit language and culture. At its 1980 Annual Assembly, ITC resolved that Southern television is disruptive to family life and poses a real threat to the survival of the Inuit language. The resolution concluded that "the introduction of television has meant the last refuge of the Inuit culture, the home, has now been invaded by an outside culture . . ." Fearing that it is too late to stop television's encroachment, the community wants to start seeing Inuit on TV addressing Inuit issues and concerns, and they want the language spoken to be Inuktitut in order that older people, who are mainly unilingual, may also share in this medium.

History of the Anik B

In 1977, ITC became aware of the possibility of using the Anik B satellite to carry out a pilot project among Inuit communities. The Department of Communications had leased the 14/12 GHz capacity of the Anik B satellite from Telesat Canada for a two-year period beginning March, 1979, and was requesting pilot project proposals from potential users. The Department's Anik B program was a follow-up to their successful use of the 12 GHz satellite Hermes launched January, 1976, for a two-year program of technical and social experiments. The experiments showed that besides providing improved services to the public, especially in the areas of health care, education, and social development, satellite communications could eliminate much travel. Once Hermes proved the technical feasibility of telecommunications operations in the 14/12 GHz bandwidth, the Department proposed the follow-up Anik B program to test operational feasibility of telecommunications services.

In the Anik B program, the emphasis was on establishing the viability of proposed new telecommunications services. The Department donated satellite time and, in some cases, ground stations to non-commercial users, who were required to assume a share of the Department's costs of implementing the project. Anik B was seen as a route to the development of a truly Northern television service.

In September of 1978, ITC secured funding of $1.9 million from the Department of Indian and Northern Affairs for a three-year Anik B project. The project encompassed a training program and a pretest period in preparation for the live satellite phase.

The Design

The Inukshuk Project has used the Anik B satellite to create an interactive satellite network linking six communities in three Arctic regions (with different time zones and dialects) with one-way video and two-way audio. In addition, a videotape circulation network with the potential of reaching all Inuit communities has been set up. The Anik B teleconferencing network consists of audio-video transmit capability from Frobisher Bay and video receive and audio transmit capability from the five communities of Baker Lake, Cambridge Bay, Eskimo Point, Igloolik, and Pond Inlet. The inital choice of communities to include in the network was complicated by the spot beam design of Anik B. The decision was made to select five receive communities in the Central West spot beam and locate the transmit ground station in Frobisher Bay in the Central East beam. This configuration permitted the three regions of Baffin, Keewatin, and Central Arctic to be included in the network, the maximum number allowed by the spot beam design and channel restrictions.

The five receive communities were selected on the basis of a number of criteria, including their commitment to the project, the presence of communications projects in the community, and ITC's desire to include as many regions as possible in the network. Community involvement was required. Involvement was tested by several criteria: Was the community willing both to donate the buildings that would be required during the project and to make some required renovations? Would residents lay a gravel pad for the ground station and erect a hydro pole for the TV transmitter? What priority did communications development have for the community? Was there a community radio station?

The Physical Set-Up

In each community people are able to participate from either a small meeting room, such as the municipal council office, or a large room, such as the community hall. The large meeting rooms are equipped with a 90 cm × 102 cm video screen. Microphones relay the voices of the participants to all six communities. Five of the six communities have local television transmitters to rebroadcast the signal to people's homes. One community, Igloolik, made the decision not to install a local transmitter. (Igloolik's people have twice rejected CBC's offer to provide CBC Northern Television Service to the community. They refused the service for many reasons, including their fears that since their children were being taught English all day in school, they would, with television, hear English all evening as well. They were also afraid that the time spent watching television would disrupt the normal functioning of organizations and discourage the practice of traditional crafts. Igloolik chose to participate in the Inukshuk project but has restricted programming reception to specified meeting rooms in the community. The programming is not transmitted into people's homes.)

Inukshuk has access to the Anik B satellite for a total of 17 hours per week. The time slots include two evening sessions and three afternoon sessions. In addition, the staff prepares programming for local transmission only, as time permits and the demands of local situations dictate. The satellite network is being tested for four different types of uses: meetings, adult education, children's education, and Inuit broadcasting. The programming is being developed in consultation with the six communities. A community coordinator worked in each community for five months prior to the start-up of the project, to assist community groups in program development. The weekly programming schedule is based on community priorities, and is a mixture of teleconferencing and broadcasting, and consists of both live and pre-taped programs. Audio teleconferencing is used with and without the one-way video. The Frobisher Bay TV studio is equipped to transmit slides, photographs or maps, diagrams or handwritten pages. Facsimile can be received and transmitted in all communities. A major objective of the project is to operate the Inukshuk network in such a way that program origination and control can come from any of the six ground station communities, not just the video transmit community of Frobisher Bay.

The Programming

The program schedules of October and November show the scope and variety of the Inukshuk programming, and demonstrate that communications have become an effective tool in Inuit life. Interactive programs have been held among the Hunters and Trappers Associations to discuss game management and control, and among the Health committees to exchange information on preventive health. The government of the Northwest Territories has met with the local education committees to discuss education standards and curriculum development. Adult education programming includes a 10-part series on how to cook food from the land, and its nutritional value. Elected representatives have met with their constituents over the network to discuss matters that are before the Territorial Assembly. Political programs are popular, and election returns coverage is followed closely.

The language of transmission is Inuktitut, with the addition of some English programming of relevance to the North. From time to time, English is used in translation for the people of the Central Arctic who sometimes experience difficulties communicating with the other two regions because of dialect differences. Inuit are determined that their language and culture will survive, and ITC sees in communications technology the potential to create a support system for Inuit

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life. After the end of the Inukshuk Project, ITC fully intends that the information gathered and the experience gained from the project will be used in an on-going operational system for Inuit broadcasting, education, and administration. (Editor's note: This network, the Inuit Broadcasting Corporation, is now established.)

One of the main goals of the Inukshuk project has been the training of Inuit filmmakers and video-producers so they can begin to program their own network. Another goal is to use telecommunications as an effective tool in Inuit contemporary life. The potential role of telecommunications in administration, information dissemination, education, and health care is becoming clarified. Effective telecommunications links are a welcome substitute for hazardous, time-consuming, and costly Arctic travel.

"Inuit may teach the rest of the world something about the way technology can and ought to be harnessed to serve the needs of the people."

The Inukshuk Project has shown the potential of television to sustain Inuit culture and allow full participation in Canadian society. As a first principle, ITC is insisting on the right to community control of broadcasting signals and is receiving regulatory support for this right to "freedom from information."

The Committee of the Canadian Radio-Television and Telecommunications Commission has recommended that "any predominantly native community should have the right to decide on the channels to be delivered locally; to eliminate complete channels; and, on any particular channel, to eliminate a program or substitute one of its own choice."

Inuit may teach the rest of the world something about the way that technology can and ought to be harnessed to serve the needs of people. ■

This article was adapted from a paper presented in January, 1981, at the Annual Meeting of the American Association for the Advancement of Science, in Toronto, Canada.

Lyndsay Green is a communications specialist and former policy analyst with the Federal Department of Communications in Canada. She worked with Inuit Tapirisat of Canada in the coordination and administration of the Inukshuk Project.

David Simailak was station manager of the first Inuit commercial radio station. He became project director of the Inukshuk Project, and is currently director of the Inuit Broadcasting Corporation.

New Publications in Health and Family Planning

Historically, the field of population and family planning has turned to development communications to spread its message. Nearly twenty years ago, the letters IEC became accepted shorthand for Information, Education, and Communication in support of family planning programs. This special concern continues today, as we see from the two following series of publications.

The Ford Foundation initiated, and the Population Reference Bureau continues, a series of Cycle booklets, each of which looks at a particular effort in the area of family planning, sometimes within the larger context of community development. To date, twelve booklets have been published. The most recent tells of an Indonesian soap opera, "Grains of Sand," that mixes entertainment with the social message of family planning. Another booklet chronicles the phenomenal success of the sub-Saharan magazine, "Famille et Développement," whose content aims at education in the fields of health and nutrition, as well as at consciousness-raising and entertainment.

A children's hospital in Nigeria and a film that documents it are the subjects of another booklet. Other topics in the series include a blackboard "newspaper" in the Philippines, the training program of the Interamerican Center for Population Communications Training, the successful network of dairy cooperatives in India, the development of print materials for non-readers in Mexico (discussed below), and a self-help health cooperative in the Philippines.

Single copies are available free; write for bulk prices. To request any of these Cycle booklets, contact the Circulation Department, Population Reference Bureau, 1337 Connecticut Avenue, N.W., Washington, DC 20036, USA.

PIACT, the Program for the Introduction and Adaptation of Contraceptive Technology of Mexico, has developed a series of booklets to give follow-up support to nonliterate persons seeking contraceptive and health assistance. With the Cycle booklet, "Sin Palabras" (see above), in hand as a guide, the nonverbal booklet on the Pill ("La Pastilla Anticonceptiva") makes fascinating "reading" and gives the necessary background to "read" the other contraceptive and health booklets available. These are each devoted to a single concept, and use simplified and/or retouched photographs—echoing the recommendations of Fuglesang—to convey a maximum of ten major points. Although no words are used in the "text," the back covers of more recent booklets list in writing the message of each numbered photograph. Some booklet topics: contraceptive shots, IUDs, vasectomy, innoculations for children, oral rehydration. For information about this interesting wordless communication project, write to PIACT de México, Shakespeare Nó. 27, México 5, D.F., México. ■

Reviewed by Judy Brace

In Pursuit of Mobile Training Units

In the June issue of *DCR* (#34) a request went out to readers to send us information about the use of mobile training units in developing countries. From the responses we received, it is clear that the term "mobile training unit" is perceived in a number of ways. The broadest definition might be the following:

Any portable entity that takes social products or services from a central location to a target audience in a field location.

Although not all specifically used for training, here are some examples of mobile units:

- A team of trainers or teachers that goes to various locations to do specialized training. (It is the *team* that is mobile.)
- A team of teachers that goes to field sites to supplement a distance education curriculum, and to test the students.
- An audio-visual van that tours rural areas or communities, showing a-v materials that will educate the local populations in matters of health, agriculture, etc.
- A fully equipped classroom or workshop for specialized education in which on-the-spot training can be given in locations such as factories or remote skills training centers.
- A van used for film and/or videotape production.
- A van used as a mobile broadcast unit for television or radio.
- A mobile library.

Readers may be interested to know of some units we have learned about. From Suva, Fiji, comes the information that the South Pacific Commission has two programs that utilize mobile training units which travel to the various countries of the South Pacific. One program, the Mobile Training Unit for Community Development, provides refresher courses taught by a three-person mobile team in the field for community and extension workers in the areas of Rural Development; Food, Nutrition, and Community Health; and Family Resource Management. These courses are provided when requested by Governments and Territorial Administrations in the region. A similar program provides a

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Media Techniques: Teaching Campesinos About an Appropriate Technology Stove

by Judy Kaul

A partnership between several technologies is often an effective way to introduce a new idea. In Guatemala, a program in technology transfer is successfully using specially designed film strips in conjunction with a series of booklets. Through the use of these media, *campesinos* in Guatemala are being taught the advantages of adopting a new, cheaper, and more efficient stove.

The appropriate technology "lorena stove" is increasingly popular in Latin America as well as in other parts of the world. It saves firewood, costs almost nothing (being made of sand and clay), and it has many advantages over the traditional open fire. Close to 2,000 of the stoves are being used in Guatemala, with many more coming into use each month.

Promoters of the Experimental Station ICADA-Choquí have been teaching Guatemalan *campesinos* how to build the stove, how to use it, and what its advantages are, for more than five years.

In the fall of 1980, the Experimental Station called a meeting of 50 stove promoters to discuss stove building and teaching strategies. Rough drafts of a filmstrip and booklet series were presented to the promoters at this meeting by Sandy Belin, a stove specialist who worked with the Experimental Station, and media specialist Judy Kaul.

The promoters critiqued the materials and decided they would like to use the final draft of the booklet and filmstrip for their work in promoting the lorena stove. From this meeting on, they felt comfortable with the approach, and they became involved in the production of the materials at every stage. The producers of the booklet and filmstrip recognized the local promoters as important resources who could help develop materials that worked.

The following are some of the decisions made in the production of the teaching materials. These decisions, and the reason why they were made, are useful to people producing teaching materials in the Third World.

I. *Choice of Media*

Filmstrips with real-life photographs were used because:

1. Filmstrips are inexpensive.
2. They can be projected using batteries or a central power source.
3. They are small and portable, and adaptable to groups of different sizes.
4. They can be converted into slides if no filmstrip projector is available.
5. Still color photographs are easily understood by illiterate people who have little experience in graphic interpretation.
6. Using a series of still photographs, the promoter can project each picture for as long as it takes for the audience to understand it.

The booklets which accompany the filmstrips are meant to be a resource for the promoters, not a script. The promoters are expected to know about lorena stoves and explain each photograph to the audience in their own words (in some cases in their own language) and answer questions.

Every color photograph in the filmstrip has a corresponding black-and-white photograph in the booklet. The promoter can use the booklet for easy reference before and during the filmstrip presentation. Members of the audience can then use the photos in the booklet to recall information given in the presentation, and to explain about the stoves to other people.

Since the booklets are meant to circulate independently of the filmstrips in some situations, and since there would not always be a promoter available to explain and answer questions, the booklets contain more diagrammatic and visual information than the filmstrips. For example, diagrams were necessary to show the shape and route of the heat-carrying tunnels inside the stove.

Many of the diagrams were left out of the filmstrips because they are difficult for illiterate people, and they would slow down the presentation without contributing to understanding in many cases.

II. *Production Decisions for the Booklet*

1. Diagrams in the booklet were made as easy to understand as possible, and they were juxtaposed with a photograph of the object represented from the same visual angle.
2. Each illustration in the booklet represents a concept, and has a brief, simple caption in large type to explain it.
3. The booklet is long and narrow, and the pictures are in order from left to right.

   The draft booklet was the size and layout of a comic book or a fotonovela. But semi-literate people often didn't know where on the page to begin, much less how to follow the sequence.

   What was dubbed the "railroad train format" was therefore adopted. As the reader opens the booklet, there are six illustrations from left to right, three on each page. None of the illiterate *campesinos* tested got lost using this format.
4. Proportions in the photographs in each spread are *approximately* the same, to avoid the appearance of giants and midgets on the page.
5. To help people interpret the black-and-white photographs, the figures and essential objects were cut out from the background and pasted on a background of neutral grey.

   Andreas Fuglesang, in his book, *Applied Communication in Developing Countries,* recommends this technique. It helps the audience use the silhouette as a visual clue, and eliminates unnecessary background interference from the message.

Typical filmstrip photographs show lorena stove being used by local people. Note background has been cut away, in the manner advocated by Fuglesang, to avoid confusing target audience unfamiliar with photographs.

III. *Visual Content*

1. In taking photographs for the filmstrips and booklets, extreme close-up shots are avoided except where necessary because they can be disorienting to people unsophisticated in graphics interpretation.
2. The same characters are used throughout the material to give the audience a sense of continuity and to personalize the information, and the characters are people the intended audience can easily identify with.
3. The environment depicted is familiar to the audience. For example, since measuring tools are uncommon in the environment of many *campesinos,* their own measuring tools were depicted—hands, fingers, and height of the person, etc.

In the production of the materials, the graphics and the explanations were constantly tried out on members of the intended audience, and whatever didn't work was discarded. The decisions that were made were based on *what worked.* Some of the strategies and decisions from this project will also work in the production of teaching materials in other situations. But experience has shown over and over that trying out and testing the graphics, the explanations, and the ideas during the entire production process is essential in this type of project. ■

The filmstrip and booklet series: Para Qué Sirve una Estufa de Lorena, Como Hacer su Estufa de Lorena, *and* Como Usar su Estufa de Lorena *are available from: Estación Experimental ICADA-Choquí, A.P. 159, Quetzaltenango, Guatemala, C.A. or: VITA, 3706 Rhode Island Ave., Mt. Rainier, Md. 20822 USA.*

Judy Kaul is a Media Specialist currently with CIDET (Centro Interdisciplinaria de Investigación y Docencia en Educación Téchnica) in Querétaro, México.

Telecommunications Conference

The Fourth Annual Pacific Telecommunications Conference will be held January 17-20, 1982, at the Ilikai Hotel, Honolulu, Hawaii. This year's conference will focus on telecommunications services in the Pacific hemisphere: the Americas, Asia, and the Pacific Islands. The program will include discussions of existing services, developing services, and future services. For further information, contact Richard J. Barber, 1110 University Avenue, Suite 303, Honolulu, HI 96826 USA.

New Data Base

The Denver Research Institute (DRI) is offering access to a new data base containing information geared to the needs of developing agricultural and industrial economies.

Created under grants from Control Data Corporation to a number of development-related institutions, the DEVELOP data base is helping to meet a critical worldwide need for finding information, transferring knowledge, and obtaining and using technologies more efficiently. Users will be able to gain access to the data base even if they are unable to use a computer terminal.

DEVELOP offers material to those needing information in the areas of alternative energy, small farm agriculture, development technologies, small enterprise development, community self-reliance, and international development.

A unique aspect of the data base is that it contains nonbibliographic kinds of information—descriptions of projects and research in progress, products, technologies, educational courses, organizations, and consultants—which have relevance for developing countries. Although some literature items are described, they are not a major focus of the data base.

The DEVELOP Information Service offered through the Denver Research Institute will provide searches of the data base in response to requests for information. Users may make requests as often as they like. Search results will be sent in easy-to-read typed or computer printout format.

Payment for the Information Service can be made either in dollars or in an equivalent amount of information supplied by the requesting organization about its own research, technologies, projects, products, and reports. The information supplied will be added to the DEVELOP data base for others to use.

As a means of introducing DEVELOP, DRI is offering all new users two free searches of the data base. These will allow users to become familiar with the kinds of information contained in DEVELOP and help them identify ways DEVELOP can be helpful. For the third and following requests, payment will be required either in dollars or in other information that can be put into the data base. It is anticipated that the cost of most searches will run between US $25 and US $100 or the equivalent in information exchange.

To obtain more information on DEVELOP, a registration form—registration is free of charge—and a User Handbook, write to:

DEVELOP Information Service, Denver Research Institute, Social Systems Research Evaluation, University of Denver, Box 10127, Denver, CO 80210 USA.

As a growing number of people around the world seek project-related information from computerized data bases, knowing how to approach those data bases efficiently becomes increasingly important. The following guidelines, drawn up by the Denver Research Institute, seem particularly apt and succinct.

1. What is the general subject? (Satellite, microcomputers, geography, rice cultivation, etc.)
2. What is the objective the user wishes to accomplish? (Background information, names of persons with experience in this field, examples of successful uses.)
3. What is the motivation behind the question? ("This information is needed for planning a countrywide program." "I have been asked by the Minister to gather information on alternatives to our current method.")
4. Where does the user fit into the project team? ("I am heading the research group interested in this topic." "I am responsible for one of seven areas of investigation; the other areas include . . .")
5. For what is the information needed? (To evaluate a program. To plan a new experiment. To learn if anyone else is working in the same area.)
6. What information has the user gathered already? Where has he/she sought information? Sources checked already?
7. What technical depth is needed? ("I am a scientist and I am interested in the latest technical information, including formulas, etc." "I am a planner and need descriptive information on applications.")
8. Are there time qualifications on the information? (Prior to 1978; or 1979 to the present.)

In addition, requestors should:

9. Specify the form the information should take (photocopies, book, technical report, standards, abstract, foreign document).
10. Specify, if possible, anticipated or acceptable answers to the question.
11. Ask the fee or approximate cost of the literature search, reference service, or referral.
12. State the complete name and address of the person to whom the information should be sent.

N.B. Information given in parenthesis is by way of example. Users' areas of interest may differ entirely from examples cited. ■

Note: **This information is adapted from the forthcoming *Information Handbook* prepared by Judith Blum and Suellen White at the Denver Research Institute, under a contract with the Bureau for Science and Technology, U.S. Agency for International Development.**

Solar-Powered Radios in Central America Open New Lines of Communication

by Mark Long

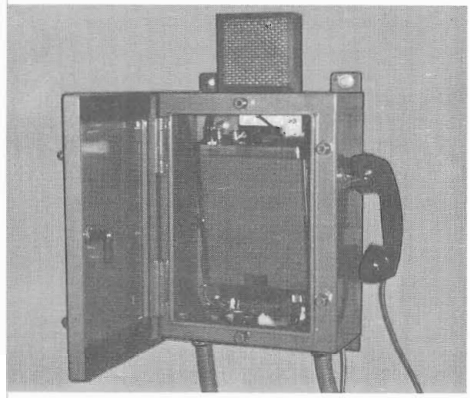
In the foothills of Central America lie many Indian villages, scattered amidst a tropical rain forest. Without the benefit of telephone or power lines, the local people depend on travelers who must take the rough roads and footpaths between the villages to pass on all messages and necessary information. Attempts have been made in the past to string telephone lines into this area, but the phone cable did not long survive the wild overgrowth and wet climate. Overall maintenance problems with this kind of system soon became apparent, and the failing telephone lines were abandoned to the jungle. It was clear that only an independently powered wireless communications system could provide reliable service in such an environment.

In one particular area that stretches over 4,400 kilometers, most of the residents, some 5,000 people, are Catholic, served by a priest who ministers to their religious, educational, medical, and practical needs. He realized the potential of communications for aiding the local people and began looking for a way to introduce a communication system into the area. With financial aid from a Canadian group, he was able to obtain the necessary funds to link scattered villages.

Complete Network Installed

In July of 1981, technicians for Solar Electronics, a telecommunications contracting and consulting firm based in Summertown, Tennessee, installed a completely solar-powered VHF-FM two-way radio network in nine of these villages. The hardware for the system was custom designed to survive in the harsh climate (160 inches of rain per year), and to provide a low-maintenance installation that could operate reliably. Each solar-powered radio station consists of a solar panel that produces electricity from sunlight; a battery pack that stores the electricity for both immediate and later use; and a radio that receives and transmits radio signals through an antenna. Each of the nine permanent units cost US $2,500, for a total of $22,500.

Past experience in Bangladesh and Guatemala (see *DCR* #28, "Solar Energy Powers Two-way Radio") had shown the Solar Electronics team that technical fieldwork should be kept to a minimum. As a result, all radio alignments were completed before being shipped to sites. Components were assembled in modular form for ease of assembly and on-site maintenance. Color-coded snap-lock power connections were used throughout the system. All external connections were housed in armored rain-tight flexible conduits.



Radio transceiver (sender/receiver) is housed in a tamperproof box, protected from bad weather and vandalism.

Radios were mounted in separate, lockable housings (see illustration). A telephone handset with push-to-talk control is outside the mounting box, and its cord is protected by armored cable.

The main base station, including a 60-foot tower and rotatable beam antenna, was installed at the local priest's home, and his four-wheel drive pick-up truck was also equipped with a mobile radio system. Now on his trips from village to village, he can maintain communications with the lay teachers at each of the church's schools where the other radio systems are installed. Educational uses for the system are planned so that information can be exchanged between the classes and teachers of the various village schools. The priest's truck now serves as an emergency medical vehicle for the area and can be immediately reached via radio whenever necessary. The radios are also used for the announcement and coordination of church activities.

Thirty-foot wooden utility poles were high enough for most of the stations' antennas, although 60-foot towers were necessary at two locations to provide complete coverage into all the villages. All stations utilized 5 db gain, omni-directional antennas. The main base was also provided with a hand-rotatable, 14 db gain beam antenna for transmitting into the harder-to-reach villages.

The radio enclosures were lag-bolted onto an inside wall of each school. The battery packs were placed inside near the radios in locked, vented enclosures. A single "maintenance-free" battery was sufficient for all but two of the bases, which used a double battery pack. One-amp solar panels were used to charge all the single battery installations; the double battery systems utilized 2-amp panels.

To install the equipment, the technicians were taken from village to village in the priest's truck, which was loaded with tools and equipment. Before their arrival, the local villagers had set the utility poles. With the enthusiastic help of the villagers, it was possible to assemble and test one station per day. As each base became operational, it was able to communicate back to the main base, and in each case, the system worked perfectly. Complete instructions for the total system were left with the installations, and a local villager is preparing to come to Solar Electronics in the U.S. for training in troubleshooting and maintenance.

When the work was completed, there were nine base stations and one mobile unit on the air integrating about 400 square miles of remote jungle. A tenth base unit will be helicoptered into the most remote of the villages later this year, and further expansion of the system is already under consideration. In ten days installation time, those nine villages had been transformed from individual isolated settlements into a fully functional communications network. This new communications link opens up the possibilities for greatly enhanced cooperation between the villages, and the excitement of the village people who helped install the system make it seem obvious that the system will be heavily used.

Since the installation this past summer, there have been several encouraging communications from the local priest concerning the system there. "The teachers have discovered it and use it nightly. They use it for school purposes, e.g. exchanging ideas on how to teach children who speak various different languages.

"I had one birth-related emergency just two nights back, and had to take a woman to the hospital late at night. The net may have already saved a life."

Many international aid efforts concentrate on large communications projects in order to connect whole areas with the outside world. But there is still a great need for small, cost-effective communications systems that can provide essential services to small groups of villages like these. By utilizing these smaller systems, life-saving communications become possible without the long delays that often accompany the completion of wider systems.

Eventually, the solar-powered communications net that was installed in these Central American villages will be interfaced with the local telephone system. The closest line to the area is only 40 miles away. With the addition of a simple tone encoding system and an automatic radio-to-telephone patch, this isolated jungle area will be directly linked to the rest of the world. ■

For further information contact: Mark Long or Jerry Miller, Solar Electronics, 156 Drakes Lane, Summertown, Tenn 38483, USA.

Mark Long is a communications engineer for Solar Electronics. He is also a writer specializing in communications.

Course Offered On Distance Teaching

A 3-month course on distance teaching and its relevance for countries in the Third World will be run from April to July 1982 by the International Extension College and the Department of Education in Developing Countries of the University of London Institute of Education, at the Institute in central London. It is designed for people working in distance teaching institutions in developing countries which are combining the use of printed materials, broadcasting, and tutorial study. The course has been run every year since 1977, and participants have now attended from well over 20 countries.

Objectives

On completion of the course, every participant should be able to:

- analyse an educational problem in his/her own country and determine whether distance teaching methods are appropriate;
- make reasoned and informed choices between different methods of distance teaching;
- write, edit, or arrange the production of learning materials for a specified audience and set of objectives.

After an initial introduction to distance teaching, there will be three intensive two- to three-week workshops: the first on the preparation and production of printed materials for distance learning; the second on production and integration of multi-media distance teaching; and the third on the planning and administration of distance teaching.

During these workshops each participant will define and begin to work on a written project which relates closely to her/his own job.

Material and information for these projects must be collected by the participants in advance and brought with them to the course.

Fees

The tuition fee for the 1982 course is expected to be about £2000. This does not include accommodation costs.

Applications

Application forms for the course, and details of fees and dates, can be obtained from either of the addresses below. *Your application must be received by 28 February 1982.* Participants must make sure they have adequate financial resources to meet course fees and living expenses, as neither IEC nor the Institute can provide any financial assistance.

Further information and application forms

Application forms for the course and further information about the Department of Education in Developing Countries and the Institute are obtainable from:

Academic Registrar
Institute of Education
Bedford Way
London WC1H OAL
England

Further information about the International Extension College can be obtained from:

Information Officer
International Extension College
18 Brooklands Avenue
Cambridge CB2 2HN
England ■

New Thesaurus Will Make Classification Easier

A new tool for handling information on mass communication and education for development is available with the Clearinghouse's *Thesaurus of Development Communication.* Over the past year, as part of our outreach and information exchange program, the Clearinghouse has been involved in the creation of a 1,000-term controlled vocabulary, or thesaurus, for the field of development communication. The words that were selected for the thesaurus were taken from those terms that occur most frequently in the materials and literature on our shelves.

As our field grows and expands into other fields, we need new means of access to the rush of information that threatens at times to overtake us. A thesaurus is one such tool. It is a set of specialized words, a kind of user's guide to the field.

The purpose of the vocabulary which makes up the *Thesaurus* is to facilitate both indexing and searching for documents within our unique collection of communications materials. As information systems become more and more automated, the "key words" used to index publications must be controlled, or limited, to avoid a proliferation of terms that would complicate the search for appropriate information. The *Thesaurus* will speed this process for both indexers and users as it helps them narrow a large field down to exact terms. With the right terms, the reader/searcher can decide precisely what information and which resources will be most relevant to his or her particular field of interest.

For example, an indexer without a controlled vocabulary as a guide might one day use the term "distance teaching" to index a publication, might another day use "distance learning," another time use "correspondence course," and yet another day, "distance education." Thus, a user of the index would somehow have to think of all these possible terms to find a document in the desired subject area. With our *Thesaurus,* the indexer, using only the controlled term "distance education," would list under that term all the related subject material for retrieval.

In addition to serving as a tool for indexing and retrieval, the *Thesaurus* groups the various fields associated with development communication into sectors: health, nutrition, population and family planning, education and human resources, integrated development, media use, etc., providing an overview of the subjects considered relevant to the field. By giving "scope notes," or short definitions, to terms, the *Thesaurus* defines the words within the scope of development communication usage, grouping terms according to a determined hierarchy.

The *Thesaurus of Development Communication* is a reference document, intended primarily for use in libraries and specialized collections. Copies of the 82-page *Thesaurus* are available prepaid from the Clearinghouse for US $4.00 each. Please make checks payable to AED in US dollars only. Institutions in developing countries may request a copy free of charge. ■

Development Communication Report, published quarterly by the Clearinghouse on Development Communication, has a circulation of over 6,000. Subscriptions are available free of charge to readers in the developing world.

A center for materials and information on important applications of communication technology to development problems, the Clearinghouse is operated by the Academy for Educational Development, a nonprofit planning organization, and supported by the Bureau for Science and Technology of the U.S. Agency for International Development as part of its program in educational technology and development communication.

Readers are invited to submit typed manuscripts of no more than 1000 words, and to send in photographs.

A Communicator's Checklist

1 *Education and Social Change: A Photographic Study,* by Deborah Barndt (Dubuque, Iowa, Kendall/ Hunt Publishing Company, 1980), 392 pp.

Education and Social Change is, in the author's words, "an exploration of the dynamics of the 'conscientization' process" first developed as a technique of literacy training by Paolo Freire during the early 1960's. The "exploration" studies the impact of the Freire method, as it is applied by an agency of the Government of Peru, on the lives of four rural immigrant women, Quechua Indians, in the "new towns" (*pueblos jovenes*) that ring Lima. The photographs, which make up about half of the book, record something of the women, their daily lives and surroundings, the Lima to which they relate (or do not relate), and the various incidents in their process of conscientization. The photographs are used to augment the emotional content of the text in the manner that Freire used first as a literacy method and then as a method of helping poor people on the margins of their society come to grips with that society. The book is an apologia inside a critique wrapped in a picture book.

Barndt also develops her own matrix for her exploration of the Freire method, imposing her structure on his key concepts to better show their interrelationships.

But *Education and Social Change* also must be read as a diary, a kind of personal history. In the author's words, "It took me a while to recognize that my study was originally narrowly focused on a pedagogy, almost disregarding context." The focus changes rapidly, however, leaving the reader to deal with indoctrination on two levels within two contexts—neither one of which is fairly presented. Indeed, one is never examined at all, only stated.

Conscientization, as applied in the setting studied here by Barndt, has become a method of indoctrination. It did and still does offer a good deal of interest to development technicians as a pedagogical method, but that is not the intention of this book.

In this case, conscientization is both examined with respect to its efficacy in attaining the desired impact on the four women, and put forward as a desirable method for helping bring the people of the *pueblos jovenes* to an understanding of the prevailing economic, social, cultural, and political context in which they live. It is then supposed to teach the women how to deal with those conditions. (The photographs are used to support the second purpose.) But the specifically Peruvian context is never really examined; instead, Freire's conception of the context, somewhat Peruvianized, simply is accepted.

Thus, the generalization leads to a superficial characterization of the political/economic context, a simplistic condemning of domination by the banks and the multinational corporations. To quote the author again, "I have found useful in this analysis a dialectical approach, which focuses on contradictions in social situations. This perspective recognizes the political nature of all action, that in order to stand for one thing, you must stand opposed to others." What results is not so much an "exploration", in the sense of finding a new trail, albeit through previously traversed ground, as a carefully guided tour.

This approach leads the author to evaluate the Freire method from the point of view of its success in getting the "students" to adopt Freire's socio-politico-economic context for an examination of their own lives and circumstances. It also illustrates Freire's method—confrontation—for dealing with authority. (I don't mean, of course, to impute the "invention" of any of these concepts to Freire. He combined them, with some original pedagogical notions, into a training method.)

Anyone familiar with contemporary Peru can raise quite a number of questions about the "context" set out by Barndt. But even if one accepts the notion that Peru, prior to 1964, could have been fairly characterized as being in the hands of a power elite which sought to maintain for itself all of the social, political, cultural, and economic ties to power, by the time this book was written that context had changed considerably. The military government that took power through a *golpe de estado* in 1964 actively sought to break up that traditional concentration of power. In a somewhat romantic and idealistic way, the new government also tried hard "to do something for" the Indians. That it did many things badly is beside the point. Might that not have been a time to seek points of congruence between the people of the *pueblos jovenes* and the government, support for support? One cannot make a definitive case that this search for congruence would have worked, of course. But one says quite enough, it seems to me, in saying that in the Freire context such a rapprochement could never have been considered.

What then, in this personal history, has become of the author's opening tribute to a sponsor who "knew that to 'educate' is not to inculcate, but to allow one to wake up, to discover, to confront?" ("Confront the truth," I suspect, was the meaning in this context, not confront the nearest available authority figure.) Are the Quechua women of the *pueblos jovenes* not to be allowed this same experience, but rather told not only what to react to, but how to react?

Again, in the "psycho-social context" of which Freire makes so much, is confrontation the best possible way to change relationships between two markedly non-confrontational cultures? For the often-noted "submissiveness" of the Quechuas is, at least in part, a logical external extension of their relations among themselves in their families and communities. And the traditional Spanish culture of Peru seems to have been designed, almost more than for any other single purpose, to avoid interpersonal confrontation. If then the subordinate Indian culture must manipulate the dominant traditional Peruvian culture to get what it wants from the economy, the society, and the body politic, the preferred mode that which most conflicts with the deeply-rooted traditions and sensibilities of both cultures?

As set out in the book, the confrontational mode does produce a few victories, at least on the group level: the landowners held off, the new well.

But I keep hearing the voice of Senora Rosa, the least "successful" of the "students" as judged by the criteria of the Freire method. When the teacher suggests that the problem of water may be more important than reading and writing, she disagrees: "No, first I prefer to read." And, "her main critique of Pablo, 'This young teacher who teaches in a different way . . .' seems to be that he isn't teaching her the mathematics she would like to know: 'I want to learn how to figure out the bill . . . , because in whatever business, they try to cheat you. . . .'"

They do indeed try to cheat you, Mamai, or manipulate you, which comes down to the same thing. In looking at you in the context of the Freire method, Barndt thinks you missed the point. I think the Freire method—and Barndt—missed the point. ■

Available for US $19.95 from Kendall/ Hunt Publishing Co., 2460 Kerper Blvd., Dubuque, Iowa, 52001, USA.

Reviewed by David Lazar, Associate Assistant Administrator, Bureau for Latin American and Caribbean Affairs, USAID. This review, like all *DCR* material, represents the personal views of the author, not the views of the U.S. Agency for International Development.

2 *Distance Teaching for the Third World,* Michael Young, Hilary Perraton, Janet Jenkins, and Tony Dodds. (London: Routledge & Kegan Paul Ltd., 1980), 249 pp.

The most readable, undogmatic book on education in developing countries in a long while comes to us from a quartet of dedicated practitioners from the International Extension College. *Distance Teaching for the Third World* begins with an overview of the current educational predicament, reviews activities in distance teaching to date, and suggests future directions.

The Western system of education is out of gear with the needs of the ex-colonial countries that have inherited it. The system is not relevant to life in those countries, and does not prepare students for practical problem-solving. Many developing countries are commendably attempting to provide universal education not only for their children, but for their adult populations as well—people who were bypassed by previous educational systems. But in trying to achieve universal education, they are attempting in a few short years what Western nations developed over half a century.

No one would disagree that the traditional classroom with a single teacher is inadequate to the growing educational problems of the world, and that some way is needed to reach the widespread populations that currently lack access to schools. In the poorest countries it is not uncommon to see 20 percent of the national budget spent on education, of which an average of 41 percent goes to primary education. The World Bank's *Education Sector Policy Paper* (1980) tells us "It is . . . clear that if education systems continue to grow at the present rate and under the same structural and managerial conditions, they will require funds that—while far below those allocated to education in developed countries—will be beyond the financial capabilities of many developing countries."

The authors of *Distance Teaching for the Third World* argue that education simply cannot expand within the confines of fixed staff ratios. "We have to find a way of offering education with far, far fewer teachers. One way—and the way that is central to the theme of this book—is to take advantage of print and broadcasts to achieve economies of scale."

Of major concern to the authors is the necessity for sharing resources and know-how so that new programs and materials can take up where others have left off. This book makes a serious effort to share specific information by giving us chapters devoted to ways in which distance teaching has been and can be appropriately incorporated into an education system. However, warning signs for pitfalls are clearly placed throughout the text. No reader will come away with an unrealistic view of what can be achieved with distance teaching.

In the chapter on teacher training, the authors look to the various benefits that may accrue through a distance teaching system, such as the contribution it can make to lessening the sense of isolation and frustration experienced by a lone rural teacher faced with meager resources. The chapter on classroom support includes a review of the various instructional television efforts that have fallen into disuse or experienced major difficulties. There are good chapters on correspondence courses and rural development. The latter takes a hard look at various elements of nonformal education and addresses the use of the mass media to upgrade and sustain the quality of extension training.

It should be noted that the book lacks up-to-date information about recent changes in the various programs discussed. For example, in the Ivory Coast, teacher and parental pressure seem to have closed the ITV system down entirely, and curriculum reform in Acción Popular Hondureña has encountered major difficulties. There is surely a dissertation waiting to be written on the link between the rising expectations encouraged by the education reform and ITV, and the frustrations connected with the current social upheaval!

"If people are to learn to control and change the world in which they live, they need to learn through dialogue and participation. Can the techniques of distance teaching be used to this end?" The authors answer their own question with an optimistic, Yes! With the caution that "there can be no one blueprint for the future of nonformal education . . ." they propose, in the final chapters, a three-pronged model of distance teaching that combines radio, print, and (radio) study groups in what they call a radio college. The authors acknowledge historic difficulties in making study groups work over the long run, but offer suggestions for overcoming them. While strongly supporting the Freireian doctrine that curriculum be the choice of the learners, they urge a program of graduated difficulty as is found in formal schools, taught in cycles, to train the learner in basic, applied skills.

The major inhibitor to the implementation of such a proposed model are the political realities of a government. Where will the country put its educational money? To train an elite or a liberated majority? What kinds of priorities or compromises are possible? Questions such as these cannot be answered in the abstract, and must be addressed by policy makers. Two case studies are included as Appendices to the book, one of teacher training in Nigeria, the other of Colombia's Acción Cultural Popular (ACPO). (A major evaluation of ACPO has been made—see *DCR* #29.)

From the resource point of view, the most valuable portion of this book is the "Annotated Directory of Distance Teaching Projects." To have so generous a listing, complete with bibliographic references, arranged by country, is a treasure indeed. Minor carping: although the Clearinghouse publications appear in the "Directory," they are not listed in the extensive bibliography.

Anyone concerned with the problems of providing education in developing nations should give this book a thoughtful reading, preferably with a copy of the World Bank's *Education Sector Policy Paper* as a companion piece to give the proper statistical perspective. ■

Available for US $49.50 from Pergamon Press, Inc., Maxwell House, Fairview Park, Elmsford, New York 10523, USA.

Reviewed by Judy Brace, Assistant Director, Clearinghouse on Development Communication.

3 *Meeting the Basic Needs of the Rural Poor: The Integrated Community-Based Approach,* edited by Philip H. Coombs. (New York: Pergamon Press, 1980), 816 pp.

Phillip H. Coombs has for a number of years been a leading observer, student, and analyst of educational programs and projects designed to serve the needs of rural people in developing countries. His style in reporting these activities deserves emulation because it is straightforward and without jargon.

Meeting the Basic Needs of the Rural Poor meets the same high standards of previous ICED publications dealing with rural poverty, rural education for young people, and rural development education.

This 816-page report presents nine case studies of community-based projects in six Asian countries selected to illustrate how activities relating to health and family planning, nutrition and food production, rural industry and employment, and efforts to improve the status of women and young children can be mutually reinforcing to the benefit of the rural poor.

Cases included have as a primary objective improving the conditions of rural poor families, through the use of an integrated approach encompassing two or more important facets of rural family life: substantial community participation and certain significant lessons about education. The various authors avoid ascribing success or failure to the projects but instead try to reveal concrete factors within each project and its environment that helped or hampered the achievement of its objectives.

Dr. Coombs performs an invaluable service in the introductory chapter by sorting out the various types of integration. He identifies

(continued on next page)

them as (1) integrated national planning for rural development, (2) integration of the essential components of a particular program, (3) integration of related activities conventionally dealt with in separate programs, (4) vertical and horizontal integration and (5) integration of efforts between separate organizations.

Three of the cases were initiated to accomplish health and family planning objectives: The Savar Project in Bangladesh, The Lampang Health Development Project, and The Community-Based Family Planning Service, both in Thailand. The Sarvodaya Movement in Sri Lanka emphasizes spiritual and moral aspects of development. The Korean case features a development concept introduced by the Save the Children Federation designed to foster local planning and development management giving grassroots meaning to the national goals of the Saemaul Ondong (New Community Movement). The Social Work and Research Center in the State of Rajasthan, India, provides a good example of a private initiative productively linked with government services operating in the same area.

The Bangladesh Rural Advancement Committee (BRAC), born in the struggle for independence, links limited external assistance to the idealistic impulses of a group of educated young people dedicated to serving the most deprived of the country's rural people. The Agricultural Institute and the Gram Bal Shiksha Kendra of Maharastra State in India both emphasize Gandhian principles in ministering to the hill tribes around Kosbal Hill.

Finally, the Indonesian Experiment in population education, organized by the Indonesian Planned Parenthood Association, is directed to out-of-school rural youth and seeks to develop community-based support for generally approved population planning objectives.

The Korean case, a good example of local-level integrated planning happens also to illustrate national-level integrated planning for rural development. The Social Welfare and Research Centre in Rajasthan provides an example of effective integration of the components of a program. For example, SWRC organized a "social education" course for destitute women, giving primary emphasis to literacy but also including craft training. The Bangladesh Rural Advancement Committee, the Savar People's Health Project, the Social Work and Research Centre, The Community Based Family Planning Service, and the Lampang Health Development Project all demonstrate integration between separate programs. Having health as a central theme, they show the importance of combining within a single integrated service the various health measures and services that are typically scattered among several different organizations.

As a group, the case studies demonstrate how horizontal integration, for example, linking nutrition to the raising, preserving, and preparing of food, and vertical integration, fortifying the work of local health personnel with more highly trained staff at higher levels, is essential to the effective operation of any "community-based" program.

Most of the projects offer examples of integration of efforts by different organizations, the fifth type identified by Dr. Coombs. It was significant that most of the voluntary organizations, rather than avoiding contact with government agencies, found that their efforts were multiplied by developing cooperative relations.

A particularly valuable section of the book is the last few pages of the introductory chapter, "What Will it Take to Help?" Here the editor identifies essential changes necessary to achieve new goals and strategies of rural development. One is a much-enlarged flow of resources from rich to poor countries. Another is that there be major structural changes, both economic and political, and he singles out strong and enlightened political leadership at all levels the most fundamental requirement of all.

Finally, he accepts his own challenge and suggests a number of "next steps" which might be taken by development agencies to more effectively realize their rural development goals.

For those who are disappointed with the pace of social change or discouraged by the lack of direct response to their efforts, *Meeting the Basic Needs of the Rural Poor, The Integrated Community-Based Approach* will provide new insights and inspiration. ■

Available for US $17.50 from Routledge & Kegan Paul Ltd., Ayer Bldg., Lawrence, Mass. 01843 USA: or from Routledge & Kegan Paul Ltd., 30 Store St., London WCIE 7DD, England.

Reviewed by Dr. Robert P. Worrall, President of the Population Reference Bureau in Washington, D.C., and consultant in development communication.

Checking References

Two reference works that will find favor among readers who seek to put order in their dealings with educational communications and technology are the *Encyclopaedia of Educational Media, Communications, and Technology* and the *International Yearbook of Educational and Instructional Technology 1980/81.*

Arranging their material encyclopedically (in alphabetical order), the *Encyclopaedia's* editors, Derick Unwin and Ray McAleese, have attempted to assemble and define all technical and theoretical terms from the universe of educational communications and technology. Three-line definitions ("Computer Typesetting") mix with ten page essays ("Educational Broadcasting"—but no entry for "Radio") complete with references that encourage the reader to browse, adding a few bytes to his/her information system (no entry). Readers wishing to better understand teaching methods such as "Microteaching" or "Simulation and Games" will be well served by these definitions.

The *Yearbook,* edited by Anne Howe of the Learning Systems group at Middlesex Polytechnic in London, brings together a wealth of educational technology information in the form of essays, lists of institutions, consultants, journals, hardware and software producers, and a selected bibliography. Although the ed tech scene is primarily viewed from the British and North American perspective, there are helpful references to activities and projects in the developing world noted, for example, in the essay on "Learning from a Distance," and in the listing "International Centres of Activity."

It is incumbent upon professionals in the educational technology field everywhere to make their activities known to the editors of resources such as the two noted here, so as to improve the usefulness of such reference works to developing country users.

The Encyclopaedia of Educational Media, Communications, and Technology is available for US $59.95 from the Greenwood Press, Inc., 51 Riverside Avenue, Westport, Connecticut 06880, USA.

The International Yearbook of Educational and Instructional Technology is available in the U.S. for US $30.00 from Nichols Publishing Company, P.O. Box 96, New York, N.Y. 10024. It is also available from Kogan Page Ltd., 120 Pentonville Road, London N1, England for £13.50. ■

Reviewed by Judy Brace

Back In Print!

Back In Print! A new and revised edition of the popular *Radio Group Learning Manual: How to Run a Radio Group Learning Campaign* by David Crowley, Alan Etherington, and Ross Kidd, and illustrated by Petra Hubbard, is now available. Written primarily for adult educators and communicators in the Third World, the 186-page paperbound book discusses how to design, administer, and evaluate a group learning radio campaign.

Messages are presented in an easy-to-follow, step-by-step format, and the book contains many cartoon drawings to spur the reader/planner on. The book is available free of charge from: Mass Media Dept., Friedrich-Ebert-Stiftung, Godesberger Allee 149, 5300 Bonn 2, Federal Republic of Germany.

Early Planning Essential to Reserve Space for Educational Uses in Tomorrow's Telecommunications

by Frank W. Norwood

Throughout most of the world, educational policy makers, from the classroom teacher to the planners in the education ministries, generally pay scant attention to communication policy. Talk of frequency allocation, power flux density, sharing criteria, etc., seems the arcane jargon of engineers. But the decisions which engineers, as well as lawyers and politicians, make can open or close the options which educators may have for employing the powerful tools of electronic communications. The American experience with spectrum allocation is useful to examine for the lessons and cautions which it provides.

More than thirty years ago, when television was in its infancy and there were only a few TV stations in major U.S. cities, some half-dozen non-governmental educational organizations and associations took action to save a place for education in communication's new medium. Led by the American Council on Education, a Joint Committee on Educational Television, now the Joint Council on Educational Television (JECT), was formed to persuade the Federal Communications Commission and the Congress that some channels should be reserved for noncommercial educational television—an alternative to advertiser-dominated, entertainment-oriented, mass market, commercial TV. The JETC was successful in that effort. Without the 1952 communications policy decision by the Federal Communications Commission to reserve certain channels, the Congress' passage in 1967 of the Public Broadcasting Act establishing the Corporation for Public Broadcasting as the major funding mechanism for noncommercial radio and television would not have been possible. Protecting education's stake in communications required policy action far in advance of the opportunity to apply the technology to the classroom or to educational programs.

In other nations, where decision-making is more centralized, closer coordination between technical and social planners, which C. P. Snow termed the "two cultures," may seem easier to achieve. However, it is often ignorance, not indifference, which is the principal problem. Moreover, the gap between Snow's "two cultures" may be just as great under any political system. Furthermore, it is unusual for coordination between education, development, and communications policy planning to be under the domestic control of any national government.

The International Telecommunications Union (ITU) is a United Nations agency whose history goes back one hundred years to the first agreements between governments regarding transnational telegraphy. Convening World Administrative Radio Conferences (WARCs), the ITU hammers out consensus on communications policies—chiefly concerning the allocation of frequencies to the wide variety of electronic services. With some recent notable exceptions, these WARCs do not undertake to assign specific frequencies to nations, but to services, establishing bands for medium-wave radio broadcasting, common carrier communications, radionavigation, television, and the like.

Space Telecommunications WARC

Such a World Administrative Radio Conference was the 1971 WARC on Space Telecommunications. In all ITU member nations, preparations for the meeting began in the late '60s. Coincidentally, the U.S. National Aeronautics and Space Administration (NASA) was planning the sixth in its series of Application Technology Satellites (ATS-6), the world's first broadcasting satellite powerful enough to transmit television to small and inexpensive earth stations.

The Indian Space Agency had approached NASA with a proposal for a Satellite Instructional Television Experiment (SITE). ATS-6 would be equipped with a television transmitter operating at 890 MHz in the UHF band and would relay programs in agriculture, health, education, and family planning to rural audiences in India. Some would view the programs at schools and community centers as they were received and retransmitted by conventional TV stations in Delhi and Amristar. But in 2400 villages, the programs would be received directly from the satellite via 3-meter antennas made of chicken wire, and electronic components which would convert the ATS-6 signal from FM to a conventional AM television signal, and shift the frequency from wide-band UHF to a standard VHF channel. All of the terrestrial technology—TV sets, antennas, frequency and modulation converters—would be Indian-built, and the programs would be designed and produced by Indians.

Search for New Frequencies

The Indians planned to seek an allocation of UHF frequencies for satellite broadcasting at the 1971 WARC. The JCET became in-

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Satellite Information

A resource collection of some 1,200 documents on communication satellite applications has been assembled and cataloged by the staff of the AID Rural Satellite Program at the Academy for Educational Development. Housed at the Academy's International Division headquarters in Washington, D.C., the Rural Satellite Program library specializes in documents that detail the application of communication satellite technologies to the delivery of social services in isolated rural areas of the developing world. The collection is intended to serve the research and planning needs of the Rural Satellite Program staff as well as to be the primary resource for the Program's technical information service, which answers specific research questions on request. As part of the Rural Satellite Program, the library and reference service are supported by AID's Bureau for Science and Technology.

The library materials range from data about the technical aspects of communication satellites to the planning of projects which use satellite systems for public service applications, to historical documents describing demonstrations and projects that have used satellite systems for public service in the past. They are easily accessed through a cross-indexed manual card-file system.

Specific reference questions or inquiries about using the library may be addressed to Sandra Lauffer, Information Manager, AID Rural Satellite Program, 1414 22nd Street, N.W., Washington, D.C. 20037, USA.

Flannel Boards Flourish

The flannel board, an educational tool used for at least 30 years by preschool and elementary teachers, appears to be the model for a visual learning system now being used by health workers in Egypt. Thanks to modern technology, the flannel on the board has been replaced by metallic plastic and the cut-outs are made of brightly colored polyvinyl chloride, backed by a metallic coating that sticks to the board in up to eight layers. The portable units are especially suitable for areas where power supply is a problem.

Nearly 700 boards are in use in Egypt, educating people about health, family planning, and sanitation. Other sessions in such fields as agriculture and poultry raising are being planned. Not only does the system bring information to rural people, but it is also helping train paramedics and outreach workers.

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volved in the U.S. preparations for the conference because of American education's interest in satellite communications. In North America, unlike India, the UHF band is very much in use for conventional broadcasting. Therefore, if there were to be American educational experiments on ATS-6, an unused set of frequencies would have to be sought.

Fortunately, an appropriate band was available. The spectrum 2500-2690 MHz is part of the band allocated to the point-to-point fixed service, and in the U.S. and Canada is given over to the Instructional Television Fixed Service (ITFS). ITFS is an over-the-air nonbroadcast (that is, it cannot be received by the general public) television service used by school systems, colleges and universities, and hospitals to deliver instructional programs to classrooms or work sites.

Powers of Persuasion

Unfortunately, nobody was prepared to propose at the 1971 Space WARC that this 2500 MHz band (or 2.5 GHz band, as space engineers prefer to designate it) be allocated for satellite broadcasting. The necessary first step to get it included among the U.S. proposals was to persuade the Federal Communications Commission (FCC), which handles non-governmental inputs to WARC preparations, that sharing the band was appropriate. The task was not easy. The FCC had to be convinced by an independent engineering study that broadcasting satellites could share the band with terrestrial ITFS, and be persuaded that the educational community was genuinely interested in satellite broadcasting. Strong support from NASA and the Department of Health, Education, and Welfare was invaluable in turning the FCC around.

Support of Third World

At the 1971 meeting in Geneva, the U.S. was alone in making the proposal, but gained the support of many Third World nations when the unique advantages of this band for the development of low-cost satellite systems were explained.

The Indians were unsuccessful in getting an allocation for broadcasting satellites at the UHF frequencies SITE would use (although a footnote to the rule permits satellite broadcasting elsewhere in the band with some limitations), but the U.S. 2.5 GHz proposal was adopted. The U.S. used that frequency for its series of educational experiments, and the band is now available for satellite broadcasting throughout the world.

For the U.S., the WARC action cleared the way for a domestic satellite broadcasting experiment on ATS-6. The world's first satellite broadcasting was subsequently inaugurated with the Health/Education Telecommunications experiments in Alaska, the Rocky Mountain States, and Appalachia in 1974, the year before ATS-6 was moved to India for the SITE project. (See *DCR* #35, "U.S. Experimental Projects Use Nonbroadcast Technology.")

For the rest of the world, the 1971 WARC decision may have been even more significant. The Indians, abandoning their original plan to follow SITE with an operational UHF satellite system, will soon initiate the INSAT-1, consisting of two multi-purpose satellites, each of which will have two channels of TV broadcasting in the 2.5 GHz band.

Recently, the Arab Satellite Communications Organization announced the grant of a $134 million contract to the French enterprise, Aerospatiale, for the construction of the ARABSAT system, which will consist of three satellites (two in orbit, one on-ground spare). Each satellite will have one 2.5 GHz TV channel designed to work with small 3-meter earth stations.

In India, and in the twenty-two member states of the Arab League, the decision made at the 1971 World Administrative Radio Conference on Space Telecommunications will soon bear fruit for the education and development efforts of their governments. In time, other nations may be expected to capitalize upon the opportunities opened by sound long-range communications planning.

U.S. Slow to Follow

It is ironic that in the U.S., where the concept first originated, and the practicability of the technology was first demonstrated, there are no current plans to build a follow-on to ATS-6, or to make use of that dedicated bandwidth.

Thus an examination of communications, development, and policy interfaces reveals the significance to educational policy makers of thoughtful and early planning for telecommunications. Coordination between technical and social planning is essential to nations wishing to control their communications destinies, and to ensure that the interests of education are provided for on their airwaves. ■

Frank W. Norwood is the chief executive officer of the Joint Council on Educational Telecommunications, a consortium of national and regional organizations in education, public broadcasting, and telecommunications.

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In Canada, we are told, there are vans in which conservation techniques for artifacts are taught, and which travel to the various regions under museum auspices. And finally, several examples of mobile film units were brought to our attention. We will continue to gather information on the kinds and uses of mobile units, and encourage our readers to assist us in our search. ■

By Judy Brace

A Response to Readers

When *DCR* introduced the Clearinghouse's new international development communication logos last June, we urged readers to let us know their reactions. As the letters came in, we were pleased not only with readers' enthusiasm, but with their eagerness to adopt the logos for their own needs and publications. Users range from public television stations to international journals to schools and universities.

However, a small but vocal minority of our readers let us know that they were displeased with one design—that of the health logo. Even though we had pretested all the logo designs and discussed them with experts in the fields that they represent, several readers found the health logo to be objectionable.

Correspondents suggested that the logo should represent a more inclusive or holistic view of health, and not show merely the preventative and or curative aspects of health which injections can suggest. One reader was troubled by the design because, as he wrote, injections given under unsanitary conditions are often sources of infection and can lead to illness and complications.

In short, a good case was made for changing the logo. After discussing the issue with our designer, Timothy B. Ward, and with several health consultants, we decided we needed a "whole person" concept—a design representing a healthy mind and body. The new health logo is the result.

Conference to Feature Applied Ed Tech

Many of today's applications of educational technology represent more than a promise in the developing world: increasingly, they are a reality in the areas of education and training. An upcoming conference will explore some of the ways in which the applications of new kinds of technology-assisted learning can help to meet growing needs for higher living standards and greater productivity in the Third World.

To be held March 24-25, 1982, at the Quality Inn, Arlington, Virginia USA, the conference will feature demonstrations of available technologies, and will also include presentations on contracting and funding sources.

For further information contact Ellen Fox, The Society for Applied Learning Technologies, 50 Culpepper Street, Warrenton, Virginia 22186, USA.

On File at ERIC

The impact of modern communication technology in Australia and Indonesia and the use of communication satellites for distance education are the focus of reports reviewed in this column. All are available in microfiche from the ERIC Document Reproduction Service (EDRS), P.O. Box 190, Arlington, Virginia 22210, USA. Some are also available in paper copy.

- Duke, Chris. *Impact of Modern Communication Technology. I: Australia.* Paris, France: United Nations Educational, Scientific, and Cultural Organization, 1980, 128pp. (ED 194 077)

This is the first volume of a two-part study analyzing the development of national communications systems, in particular the introduction of modern mass media, and the impact of this technology on "traditional" as well as "industrialized" societies. In addition to describing how the economic, cultural, and social structures of these societies are affected, the two case studies attempt to analyze the role of mass media in cultural life, in social integration, and in national development. The first study, which focuses on Australia as an industrialized nation, discusses methods and models of research on communications and society, as well as the current status of mass communications in Australia in the context of an uncertain national identity and choices that must be made. Chapters address perceptions of mass communications and issues involved in the development of a national communications system and policy; public broadcasting, community access, and ethnic radio; and the development of a communications satellite system. Australia is seen to be an economically developing country despite its affluence, and it seems uncertain whether the development of communications satellites and community and ethnic radio will be used to strengthen cultural diversity, or negate it. Available from EDRS in microfiche for 91¢ plus postage.

- *Impact of Modern Communication Technology. II: Indonesia. New Communication Order 2.* Paris, France: United Nations Educational, Scientific, and Cultural Organization, 1981, 87pp. (ED 202 475)

The development of national communications systems, particularly radio and television, and the impact of this technology on the largely traditional society of Indonesia was the focus of this case study based on a two-year repeated survey sponsored by Unesco. The sociocultural effects of radio and television communications on Indonesian national integrity, language use, development of educational programs, dissemination of information on new agricultural technologies, family health and welfare, construction and public works, patterns of consumption, and social values are described, as are the effects of radio and television on the economic, cultural, and social structures of the entire society. While television has generally strengthened the traditional communication networks of interpersonal and village administrative chains, different economic and sociocultural backgrounds have strongly influenced various groups' acceptance and use of information provided by the medium. The distribution and ownership of television receivers has proven to be a prime factor in the effectiveness of modern communication systems, and local opinion leaders tend to make intensive and regular use of television if it is available. Available from EDRS in microfiche for 91¢ plus postage.

- Yeoell, Barbara. *Anik B Interactive Instructional Television Project, October 1, 1979-May 31, 1980. Report Number One. Project Overview.* Burnaby, British Columbia: British Columbia Institute of Technology, 1980, 46pp. (ED 200 765)

Part of a two-year communications experiment using the Anik B satellite, this project was designed to explore the possibilities of using Interactive Instructional Television (IITV) to provide distance postsecondary education for people living in widely scattered and sometimes inaccessible areas of British Columbia. The project proved to be both educationally feasible and acceptable to the people. This overview, the first of six reports stemming from the project, traces the development of the project, provides comments on how the people involved responded to IITV as an educational delivery system, touches on aspects of the project described more completely in later reports, and looks at the courses offered, the limits of the project, and some information gained during its conduct. Available from British Columbia Institute of Technology, Distance Education Department, 3700 Willingdon Ave., Burnaby, B.C., Canada V5G 3H2 ($3.00), or from EDRS; microfiche 91¢, paper copy $3.65 plus postage. Also available from the same sources are *Report Number Two. The Technical System and Its Operation* (ED 200 766: British Columbia Institute of Technology, $4.00; EDRS, microfiche 91¢, paper copy $6.95 plus postage); *Report Number Four. Evaluation Perspectives: A Methodological and Historical Review of the IITV Evaluation* (ED 200 767: BCIT, $10.00; EDRS, microfiche 91¢, paper copy $20.15 plus postage).

- Agrawal, Binod C. *Satellite Instructional Television Experiment: Television Comes to Village. An Evaluation of SITE.* Bangalore, India: Indian Space Research Organization, 1978, 108pp. (ED 201 301)

This evaluation of India's Satellite Instructional Television Experiment (SITE) investigated the process of existing rural communication, the role of television as a new medium of communication in SITE instructional areas, and the process of change brought about by television in the rural structure at the micro-level. The report includes descriptions of the methodological strategy and profiles of the villages; analyses of the cultural and developmental communication patterns; discussions of the introduction of television to the villages, including the viewers, content and preferences, the process of change, the educational role of television, and the effects of the removal of television; and conclusions and implications of the findings. The objectives of SITE as defined in the Memorandum of Understanding, a daily television viewing observations sheet, and lists of regional viewing groups, Hindu and non-Hindu, are appended. Available from EDRS in microfiche for 91¢ or in paper copy for $8.60 plus postage. ■

Barbara B. Minor, Publications Coordinator, ERIC Clearinghouse on Information Resources, School of Education, Syracuse University, Syracuse, New York 13210, USA.

Christmas Greetings from a *DCR* Reader

It is with great pleasure that I write this Christmas message to you, DCR *staff, and to those throughout the USA, hundreds of friends and well-wishers, in the SPIRIT OF CHRISTMAS. In our motto as social workers, "No man liveth unto himself," I perpetuate daily the theme of Christmas, "PEACE ON EARTH, GOODWILL TOWARDS MEN."*

So let this Christmas continue to remind us of the cause to which we are dedicated, and reinforce our hearts and hands for the fuller life of service. Also to AID staff I extend all good wishes for a Happy Christmas and a bright prosperous New Year in 1982.

From Gaudensia Kokubera, Assistant Community Development Officer
(Former Tanzania AID student 1964-65)
Masake, Uganda

Documentation: Postcard on Low-Cost Technology

Specific Subject: "16 Cavans More Unmilled Rice Per Hectare Through Good Management"

Description of Material:

Size: 9 cm × 14 cm

Paper: Vellum

Illustration: A full-color photo showing a farmer incorporating fertilizer with the use of a rotary weeder.

Text: In the national language (Tagalog). Message conveyed in three sentences.

Rationale:

1. Postcards are public and can be shared with others.
2. Postcards stimulate interest and curiosity because of their colorful pictures.

Target Audience: Selected farmers in Quezon, Cavite, and Batangas whose average yield is 75 cavans per hectare or below.

Methodology: Personal and/or mail delivery by the Provincial Information Officers.

Expectations:

1. Effects of the postcard on farmer's yield. Will it motivate the farmer to act on tips and suggestions given on the card after he has read it?
2. Effects on farmer's morale. Will it give him a sense of importance?
3. Effects on farmer's attitude towards field workers, program, and government. Will it encourage him to consult with his farm management technician? Will it motivate him to write back to the source of the card? Will it create or arouse in him a feeling that the government is concerned with his welfare?

Initial Approach:

Pretesting of the card prior to its final printing among 24 farmers to:

1. Assess the effectiveness and clarity of postcard prototype prior to mass production and dissemination to farmers.
2. Obtain feedback as to audience understanding of material's contents.

Methodology: Qualitative discussion—interview with farmer was conducted by the National Media Production Center, printer of the postcard, covering the following aspects of the material:

1. Content
2. Technical features
   a) Size of card
   b) Size of print
   c) Other features

Results:

A. Text
   1. The Tagalog-speaking respondents understood the contents easily while those non-Tagalog had difficulty in reading the text.
   2. The postcard's contents were not new to those places reached by irrigation. The procedures stated are being practiced presently.
   3. The introduction is a little vague (P750 added income for every hectare).
   4. Interpretation of numbered text (1 & 3) is similar.

B. Technical
   1. The text was not read easily even by Tagalog-speaking farmers since the type was too small.
   2. The size of the card was all right.

C. Other Features
   1. Not all the farmers could follow the procedure for the following reasons:
      a. No irrigation system.
      b. No control of water in the field due to absence of water system.
      c. Rotary weeder distance between "punla" does not always coincide with distance set by rotary weeder.
      d. Land already fertile.

Suggestions:

1. Bolder and bigger letters.
2. Translation for non-Tagalog speaking regions.
3. Inclusion of pest control system in the text.

Changes based on results and suggestions yielded by the pretest were made by the Agricultural Information Division in the final printing of the postcard. Notable changes made:

1. Introduction and text were revised and simplified. In the final revision, introduction urged farmers to heed the Agriculture Minister's advice on proper fertilizer application and water management. Numbered texts were reduced from 4 to 3 statements.
2. Size of type was made bolder and bigger.

Campaign Postcards Are Motivational Too

by Dominador C. Ynaya, Jr.

In its continuing effort to look for better, more effective, and less expensive ways of communicating with the farmer and his family, the Philippine Ministry of Agriculture late last year came up with a postcard on low cost technology, specially titled in the vernacular "Teknolohiyang Walang Gugol," urging farmers to produce 16 more *cavans* of unmilled rice per hectare through good management.

The 9 cm × 14 cm vellum postcard has for its illustration a full-color photo showing a farmer incorporating fertilizer with the use of a rotary weeder. Opposite the illustration is a space for the farmer's address. On the back of the card is the instructional message in the national language (Pilipino) conveyed in three developmental sentences.

The postcard experiment was inspired by a recent Bangladesh experience which made wide use of the postcard as a motivational and informational tool in a water purification campaign and in other development programs in the countryside. The postcard experiment in Bangladesh proved to be very effective, and the reasons advanced for its success were:

1. Postcards are public and can be readily shared with others.
2. Postcards, like photos, stimulate curiosity and interest, and are fun because of their attractive, colorful illustrations.

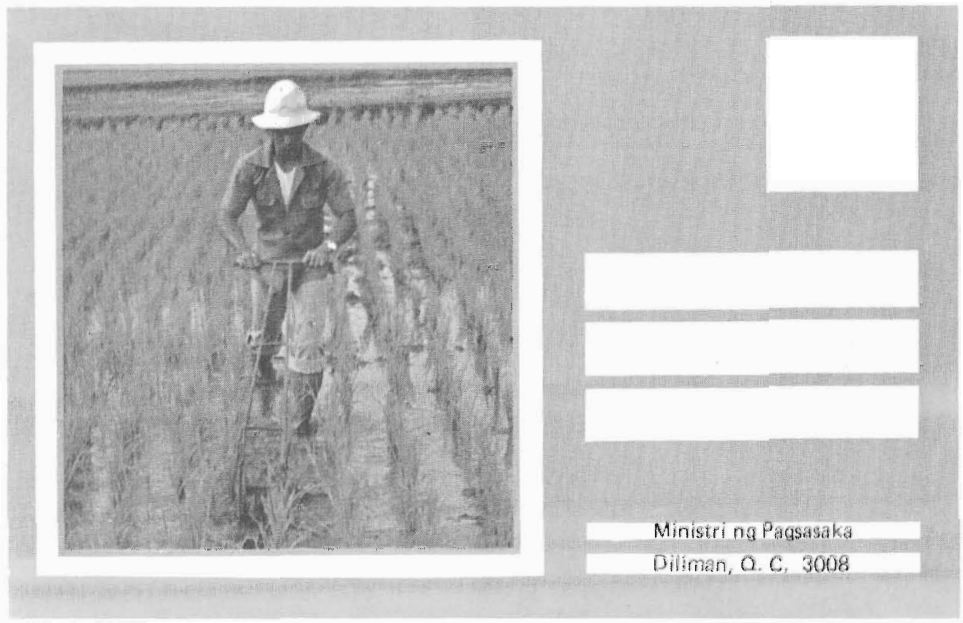
Taking its cue from the Bangladesh experience, the Agricultural Information Division, the information arm of the Ministry, printed some 5,000 copies of the postcard after pretesting it (with the help of the National Media Production Center) among 24 farmers in Bulacan and Pangasinan. Pretesting helped assure the postcard's clarity and effectiveness, taking into consideration audience comprehension of the material's content and technical features.

The Agricultural Information Division limited its distribution of the postcards to selected farmers in Batangas, Cavite, and Laguna whose average yield is 75 *cavans* per hectare or below. About 3,100 postcards were mailed individually. Two months after the distribution, a survey was conducted by the division (with the assistance of some regional field personnel) in four municipalities of Batangas to determine the postcard's effects on farmer's yield and morale, as well its effect on their attitude towards field workers, program, and government.

Initial results of the survey covering two Batangas municipalities do not reflect much of the postcard's effects on farmers' yield. However, they do show favorable reaction to the instructional message of the card because of its clarity and applicability. A majority of the farmers endorsed its size and color and readily agreed that the postcard serves as a good reminder. They also found it worth sharing with their farmer neighbors and worth keeping, too. A large number of respondents, however, found the illustration unrealistic. They specifically noted the wrist watch, white cap, and jacket worn by the farmer (see photo on postcard). They also pointed out the inappropriateness of the title ("Low-cost Technology") because they claimed that, somehow, they also need money to follow the instructions. ■

Dominador C. Ynaya, Jr., is the Chief of the Printing, Circulation, and Evaluation Section in the Ministry of Agriculture, Republic of the Philippines.

For further information, contact Dominador C. Ynaya, Jr., Chief; Printing, Circulation & Evaluation, Ministry of Agriculture, Diliman, Quezon City 3008, Republic of the Philippines.



Color photo on Ministry of Agriculture's postcard shows farmer following instructions which appear on reverse side of card.

English Translation of Postcard Message

Low-Cost Technology

Tips from Minister Arturo R. Tanco, Jr., on proper fertilizer application and proper water management of irrigated ricefields.

1. Harrow the rice paddies on the first fertilizer application to incorporate the fertilizer well with the soil.
2. Maintain shallow water level at 3 centimeters from transplanting.
3. On the 25th day after transplanting, apply fertilizer (2nd fertilizer application). Use a rotary weeder to incorporate well the fertilizer with the soil. Flood the paddies for 5 days.

(continued from page 7)

team of three trainers who travel about, training persons who work in Youth and Community Development programs in the participating countries. A 9-month course is divided into three 3-month segments. The first segment consists of formal teaching, the second is a period of supervised field work, and the third is used by students to develop their own programs. Information about either of these two units may be obtained from the Director, Mobile Training Units, South Pacific Commission, B.P. D5, Noumea Cedex, New Caledonia.

The International Labor Office in Geneva was most helpful. They sent us a summary of a discussion on mobile training action in rural areas from a joint FAO/UNESCO/ILO session on Agricultural Education and Training. "Current efforts to provde rural people with some access to vocational training have brought back the use of mobile training units (MTUs). Especially equipped trucks, motorcycles, boats, trailers, and tool containers are being set up as MTUs to deliver vocational training courses to isolated rural villages. However, the training content—curriculum—delivered through such mobile units is, quite often, conventional and unrelated to the training requirements of rural people." This interesting theme will no doubt be followed up on in two articles on mobile units that will appear in their publication later this year. For information on this publication, you may wish to contact John Skull, Editor, Training for Agriculture and Rural Development, FAO, Via delle Terme di Caracalla, 00100 Rome, Italy.

(continued on page 12)

Let the Children Paint

The children of an urban squatter settlement in Nairobi, Kenya, are learning to explore and express the difficulties of their lives through painting, storytelling, drama, puppetry, and sculpture. The "Let the Children Paint" project was inspired by the social and economic conditions in Nairobi's Mathare Valley area, where the estimated 100,000 residents live in substandard housing made of cardboard, paper, and tin. Studies indicate that from 60 to 80 percent of the adult population is without steady income, and that unmarried women with an average of four children make up a large percentage of the valley's population.

Although a community-sponsored nonformal school is in operation to help the children gain basic educational skills, its facilities are too limited to provide adequate enrichment activities. Recognizing the crucial importance of creative expression for all children, both in coping with life and in being productive individuals, the director of the Paa Ya Paa Art Gallery in Nairobi, artist Elimo Njau, decided to sponsor this experimental self-development project for young people.

In the phase of the project just completed, children were involved in painting and sculpture enrichment activities carried out at the school and the Paa Ya Paa Gallery. In the next phase, a nonformal communication specialist will help the children focus on the social issues that confront them. They will participate in developmentally sequenced exercises that will enable them to verbalize, visualize, and dramatize their experiences, and they will hear storytellers, create small plays, sculpt puppets, and learn to identify elements in their environment. Then they will determine what they consider to be problems in their communities and develop dramas, puppet shows, or murals addressing those problems.

Ultimately, the children's messages will be taken to the larger community, with Paa Ya Paa sponsoring an exhibition of their work and a publication that will demonstrate the perceptions, abilities, and sometimes exceptional talents of the children.

For information contact Marilyn Blain Wood, Paa Ya Paa Gallery, P.O. Box 49646, Nairobi, Kenya. Ms. Wood is a consultant in nonformal communication, working with this project through the Mission Intern Program of the United States United Methodist Church.

Media And Messages

Flexibility is the key to development communication in India

by T.E. Voigt and Rajive Jain

It is dark at the construction site near New Delhi. The air is heavy with smoke and spices as Rajasthani construction workers cook rice and lentils over open fires in front of tents. Suddenly the headlights of a van pierce the darkness. As the vehicle bumps over the uneven ground, "Lok Doot! Lok Doot!" sounds excitedly into the Indian night.

Lok Doot, a mobile educational theatre unit, is just one of the many groups in India that use theatre as a medium for development communication. Its repertoire includes humorous skits on the value of literacy, hygiene, and balanced nutrition. The material is drawn from the audience's daily life. Thus, "balanced nutrition" means supplementing the staple diet of lentils and rice with green leafy vegetables known to cure night blindness, an ailment common among construction workers.

Lok Doot is financially better off than many other groups. Its parent company, Mobile Creches, was founded 10 years ago by middle-class women to provide daycare and, later, educational facilities for children of New Delhi's predominantly female construction workers. Now they try to educate parents as well as children.

Various such theatre groups operate throughout India, most of them on shoestring budgets. They need few props, no technological training, and can arrange instant feedback or discussions around their performances.

At the other end of the communications scale is videotape recording. But despite its advantages, video is an expensive medium for citizens of a country like India. "If, to trigger a social process, I need 75,000 rupees worth of equipment and two or three highly paid workers, then I am not a social worker," says the director of Chitrabani, a Calcutta-based agency.

Although less expensive, even cassette recorders and slide projectors are costly items in a country where the average annual income is about Rs 1,000. A cassette recorder costs at least Rs 800 and even a film projector lightbulb can cost Rs 150 to replace.

Added to the cost of the equipment and staff training is the problem of appropriate audiovisual material. An Indian villager, unused to Western art or photographs, may not receive the intended message of a slide show.

UNICEF has found that two-dimensional traditional drawings can be more meaningful to rural populations in Nepal than photographs. Chitrabani is experimenting with hand-drawn slides to allow villagers to abstract messages into pictures more meaningful to them.

Low-cost slide projectors are also being developed. Chitrabani is working with what it calls a Magic Lantern that can be manufactured locally and inexpensively and can function with either a 100-watt lightbulb or a petroleum lamp.

The government of India has long recognized the importance of mass communication. Radio has been considered a tool of national development since India drew up its first Five Year Plan in 1951. Like television—which was introduced in 1957—All India Radio (AIR) remains state controlled. In 1977, a total of 84 stations and 155 transmitters beamed out 1045 hours of programming a day in 35 languages and 137 dialects. Even so, only about one-third of India's population has access to radio, although almost 70 percent of India's geographical area could potentially be reached.

The Working Group on Autonomy for Radio and Television was critical of India's programming to date, commenting in its final report: "There is little doubt that by opening up new worlds of knowledge and opportunity, broadcasting can be a powerful liberating force. Yet the tragedy is that radio and TV have, with rare exceptions, tended to avoid programs that specifically focus on poverty, exploitation, and social justice, even if these are limited to educating the illiterate and oppressed about their legal and social rights."

In the field of communications, flexibility is particularly important in a country as complex as India where two-thirds of the people are illiterate, and which is divided into distinct ethnolinguistic regions. The purpose of the communication must take precedence over the nature of the medium, for each has something to offer, be it a street play or a national radio program. ■

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Development Communication Report

Clearinghouse on Development Communication

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March 1982
No. 37

Report from the Acapulco Conference: IPDC Off to a Promising Start

by Clifford H. Block

The new International Program for the Development of Communication, the IPDC, is now a reality. The 35-nation Council of the IPDC met in Acapulco, Mexico, in January 1982 at the invitation of Mexican President Lopez Portillo and took the organization's first major actions. Delegates agreed on a list of candidates for Director, established criteria for future project funding and for financing mechanisms, and approved the first round of IPDC-funded or endorsed projects.

The IPDC is an effort by the international community to enhance the communications capabilities of the developing world. Stemming from a U.S. proposal at the 1978 Unesco General Conference, the idea has evolved from a clearinghouse on needs and funding sources to an institution which also has its own funding. While operations are partially supported by Unesco, project funds are developed through voluntary contributions. The largely non-ideological character of the gathering in Acapulco was evidence of the degree to which the practically oriented program of IPDC has engaged the support of every political bloc.

In this issue . . .

Candidates for Director

The IPDC will have a small professional staff, initially a Director and Deputy, housed at Unesco, in Paris. The Council endorsed a distinguished list of experienced communications professionals, put forward by the "Group of 77" developing nations, from which Unesco Director General M'Bow soon will select a Director. The candidates are:

Khorshed Alam, Bangladesh
Secretary, Minister of Information and Broadcasting

Sarath Amunagama, Sri Lanka
Secretary, Ministry of State

Goodwin Anim, Ghana
Communication Consultant

Albino Alberto Gomez, Argentina
Newspaper Correspondent

Jose Antonio Mayobre, Venezuela
Division of Development of Communications System, Unesco

Parayil Unnikrishnan, India
Deputy General Manager, Press Trust of India

T. Nelson Williams, Liberia
Director, Public Affairs Department Lamco Joint Venture.

Financing Mechanisms

The issue of multilateral vs. bilateral aid arose in Acapulco. The debate centered on the status of Council-approved projects which might be subsequently funded by bilateral mechanisms, rather than by the IPDC Special Account or by Funds-in-Trust. Some developing nations initially objected to the inclusion of such projects in the IPDC portfolio. Several Western nations argued strongly that bilateral mechanisms offered an IPDC project channels for funding that could not be ignored, and should even be encouraged, since many donors operate within constraints which discourage Special Account contributions. Since three nations (Austria, The Netherlands, and Australia) had offered to fund specific projects approved by the IPDC, and others had similar intentions, the issue was vital. In the end, the Council adopted language that did not rule out bilateral funding.

Projects

The longest discussions of the meeting involved the review of 24 regional, 3 worldwide, and 27 national projects proposed for funding or endorsement. In spite of lengthy debate on a few projects, consensus was maintained. Regional and worldwide projects were given funding priority over national projects; among regions, Africa was afforded top priority as the neediest area in terms of present communications infrastructure and institutions.

The 8-nation Bureau of the IPDC, an executive group which represents the Council, subsequently allocated $741,000 in first-year funding to 14 regional projects; bilateral donors agreed to fund two other regional efforts and one national project. Several other national projects were approved, subject to future funding availabilities. The funded projects:

REGIONAL PROJECTS

AFRICA

Pan African News Agency (PANA); (also $2 million to be negotiated from the Gulf States Program for United Nations Organizations) $100,000

Regional Project for Development of Communication Technologies (Funding to be negotiated with the Government of Austria)

ACCE Institute for Communication Development and Research $10,000

Establishment of a Network for the Exchange of Economic News Among the Press Agencies of the CEAO Countries $10,000

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A publication of the Clearinghouse on Development Communication
Supported by the Bureau for Science and Technology of the U.S. Agency for International Development

Beyond Slogans: A Serious New Role for Radio

by William Smith

As recently as 1952, the question was first posed, "Why can't you sell brotherhood like you sell soap?" Since then, social marketers in the United States have tried to apply the principles of commercial marketing to the promotion of social ideas, using slogans like "Only You Can Prevent Forest Fires," . . . "Don't Drink and Drive," . . . "Buckle Up," . . . and "Breast is Best." Sloganeering has become a standard part of the mass communication lexicon. Gradually, practitioners have come to make a critical distinction between programs of *social advertising* which rely on slogans to inform and motivate, and of *social marketing* which emphasize the interrelatedness of the following four elements:

- Product: the characteristics of the commodity or idea to be promoted;
- Price: the real cost in money, time, prestige, and power to the consumer;
- Place: the system for distributing the idea or commodity which ensures easy access for a significant percentage of consumers;
- Promotion: the knowledge, attitudes, and beliefs which the consumer requires to adopt the idea, and the means of delivering each.

The driving force in an effective social marketing strategy is the intensity of consumer needs and wants. Consequently, the distinction which development planners often make between "felt" needs and "real" needs becomes academic. For the social marketer, "felt" needs are the only real needs. To convince a rural farmer that family planning is important because the world is overpopulated, or to promote the boiling of water because it kills some invisible creature that a rural mother doesn't believe really exists, denies the basic assumption of successful marketing: the attitudes, beliefs, and values of the consumer are central to the design of an effective program. A public education program built around consumer values is presently under way in a Latin American and a West African country.

The Ministries of Health in both Honduras and The Gambia have embarked on separate but parallel programs to test the effectiveness of social marketing applied to the prevention and treatment of acute infant diarrhea. Through the Mass Media and Health Practices Project sponsored by the Office of Health Education within the Bureau for Science and Technology of AID, the Academy for Educational Development is assisting Honduras and The Gambia in their concerted effort to reduce diarrheal mortality due to severe dehydration in small children.

New Oral Therapy

In the early stages of dehydration, a child does not have to be hospitalized and given fluids intravenously. The child can be cared for at home, and rehydrated through oral rehydration therapy (ORT), a promising new tool for halting the diarrhea-dehydration-death sequence so common among young children in the developing world. But ORT is dependent upon mothers and health care workers who can recognize when the remedy is needed, and who are able to mix and administer the remedy properly. In essence, oral therapy is a new "product;" a package of simple chemicals (salts and sugar) and a set of accompanying skills which offer a practical remedy for a serious killer in both countries.

Labels on Litrosol packages use words, pictures, and numbers to convey life-saving directions.

In Honduras and The Gambia, the challenge is how to deliver both the remedy and the necessary skills to administer it to even the most isolated rural villages, villages with no health care center, no mail or telephone system, and no reliable network of roads. The reliable communication channels that these two countries *do* have are radio and an effective system of traditional interpersonal communication.

The Mass Media and Health Practices Project is creating a public education campaign that combines health worker training, specially designed print materials, and widespread use of radio to reach isolated villages. Each element of the campaign is designed to interact with and reinforce the other elements. Slogans such as "Madre Que Pecho Da es Madre de Verdad" ("The Mother Who Breastfeeds Is a Mother Indeed") have helped to standardize the central messages. But, more significantly, careful sequencing and design have made it possible for radio to act as an effective stimulus and reminder about the important mixing and administration skills being taught by health workers.

Mixing Instructions

In The Gambia, for example, mixing instructions for a simple sugar and salts O[illegible] solution are being color-coded on an inexpensive one-page flyer which is distributed free, and which also serves as a lottery ticket. A national radio lottery, offering such prizes as radios, t-shirts, and liter cups, is being organized to stimulate the widespread distribution of the flyer. Radio will take advantage of mothers' interest in the lottery to teach the mixing instructions through reference to color-coded sections on the lottery flyer. Radio is thus helping to transform an otherwise indecipherable piece of paper into a potentially powerful learning device in the village.

In Honduras, it was obvious that the Ministry's normal distribution schedule for drugs would be inadequate to meet the special demand for rapid and easy access to large numbers of ORT packages. During a 6-month preprogram investigation, a number of new distribution points were identified. Radio was called upon not only to promote the prepackaged ORT compound, Litrosol, as a new remedy, but to popularize new distribution points for the remedy. These included local mayors, selected midwives, and local health care workers. The problem was how to ensure that these selected individuals could [illegible] easily identified by rural villagers. The so[illegible]tion was a simple flag featuring a large red heart. Flags were distributed along with the stocks of Litrosol packets to mayors, midwives, and healthworkers, who placed the flag in an easy-to-see place outside their houses. Special radio spots then advised the villages "to find Litrosol, look for the flag with the red heart."

This simple message, which could be broadcast hundreds of times a week, proved an uncomplicated and effective way of ensuring the maximum exposure to the campaign at a minimum cost to the Ministry.

Consistent Sequence

While the program differs considerably in the two countries due to organizational and cultural differences, a consistent sequence has been followed to design the overall campaign plan. The first step was to develop a series of theoretical models which defined not only the medical and biochemical aspects of diarrhea and oral rehydration, but carefully described the socio-cultural consequences of the program.

Key issues were then extrapolated from these models and used to structure an int[illegible]sive field investigation which included: (a) focus group and individual interviews with several hundred mothers, (b) ORT mixing

(continued on next page)

(continued from page 2)

trials in actual rural villages, (c) home observations, and (d) interviews at local pharmacies and medical facilities. The results of this research were then used to define the precise target audience, develop message themes, and finally, produce the draft materials. The most important materials, those which affect the largest audience, were pretested and significant modifications were made based upon pretest results. In one case, for example, the numbers used to identify a sequence of activities on a mixing poster were confused by the audience and taken to refer to the number of packets, glasses of water, etc. to mix. This obviously critical problem was subsequently corrected.

The two campaigns were designed in several phases which are consistent with the seasonal prevalence of diarrhea (highest during the rainy season) in both countries. The transitional phases permit regular monitoring of program effectivness and provide logical points for re-design and re-orientation of the messages as needed. The flexibility to make mid-course adjustments based on reliable field information is another key element of the program.

Other Media Campaigns

The program in Honduras is now in full swing. Almost a year of broadcasting is completed and a second broadcast year is soon to begin. In The Gambia, planning is completed and the one-year broadcast cycle is scheduled to begin in early April 1982. Although the project is being systematically evaluated through a separate contract between AID and Stanford University's Institute for Communication Research, summative results are not yet available. Anecdotal information, especially from Honduras, indicates that Litrosol is now well recognized by the rural population. The distribution system for both packets and educational messages appears to be in place and working. We have yet to determine, however, what the full impact of the campaign will be. We do know that the Ministry of Health in Honduras is currently building an integrated and mediated (that is, making use of a range of communication media techniques) public education approach into two new large-scale health programs.

In sum, there is growing evidence of the positive role which mediated programs of public education can play. We believe that such programs can do a great deal more than simply "publicize and sloganize." We are convinced that under the right conditions, with an appropriate type of problem and sufficient time available, mediated public education can make a powerful and unique instructional impact on widespread and isolated audiences at a highly competitive cost. ■

William Smith is Vice President and Associate Director of the Academy's International Division, and presently Project Director of the Mass Media and Health Practices Program.

Using Radio to Teach Language Arts:

Pilot Program in Kenya Addressing Primary Needs

by Morris Cutler

Can children learn to read and understand English from radio instruction? Answering this question is the purpose of a pilot project being developed for Kenya primary public schools. Like many developing nations, Kenya suffers from an expanding school population and a scarcity of qualified teachers, particularly in rural schools. The Radio Language Arts Project[1] is an attempt to provide a language program pertinent to the needs of children outside the urban areas and to improve the quality of the instruction of English as a second language in a cost-effective manner.

The instructional design is based upon methodology successfully applied in the Nicaragua Radio Mathematics Project implemented by the Institute for Mathematical Studies in the Social Sciences, Stanford University, in 1973.[2] This project was a joint venture of the United States Agency for International Development and the Nicaraguan Ministry of Public Education. An evaluation of the project indicated that students in the experimental radio classes scored significantly higher on tests than their non-experimental counterparts. Because of the success and design of the Radio Mathematics Project, its methodology was considered applicable to other subject areas in other nations.

Background

Pupils in Kenyan public primary schools are taught in their mother tongue for the initial three years. As delineated in the Kenyan Statement of Objectives,[3] instruction in English as a second language is phased in, beginning in the first school year. By the end of the third year, "the child should have acquired a sufficient command of vocabulary and language patterns to enable him to use English as the medium of learning." Starting in standard 4 (grade 4), English becomes the language of instruction and by the end of standard 7 (grade 7) pupils are required to pass the Comprehensive Proficiency Examination to qualify for secondary school enrollment.

With the elimination of primary school fees in 1973, enrollment soared, straining the economic and educational resources of the nation's schools. Instructional materials, schools, faculty housing, and qualified teachers were in short supply. To meet the aspirations of the people and the growing needs of the nation's children, this Radio Language Arts pilot project will attempt to increase comprehension of oral and written English by using radio as the basic instructional medium for pupils in standards 1, 2, and 3.

Curriculum and Methodology

The Radio Language Arts Project (RLAP) must follow the official goals and curriculum for primary pupils of Kenya's Ministry of Basic Education. While the goals and curriculum of the RLAP and the conventional curriculum are the same, the means by which the RLAP achieves these goals and presents the curriculum through radio lessons will differ. In Kenya, English is taught as a second language and parallels the basic skills of the language program in the mother tongue. The RLAP will use an integrated language arts approach which will focus on language function, emphasizing meaning and communication activities. Listening and speaking will precede reading and writing. Readiness experiences in both reading and writing will be implemented from the start of the program. Each facet of language skills will be used to reinforce and expand the others.[4]

Radio instruction will require active participation and response by pupils to enhance learning. Children will talk, write, and respond physically throughout the program. Each skill will be carefully developed, presented, and practiced in short, frequent lesson segments, and pupils will receive immediate correction or encouragement from their teachers to stimulate learning.

The lesson content is based upon criteria which will assist the student in learning a specific skill but will relate to the learner's needs and interests in his rural environment. Materials will be screened by the Kenyan team members to ensure that they are appropriate and reflect the values of the culture.

Since cost is a major concern of the project, efforts will be made to reduce the materials which will be supplied to each class. Books require not only paper and printing but also distribution, which is costly and difficult. During the first year and part of the second, charts and worksheets will be developed, but as children become proficient in writing, worksheets will be phased out. Whenever possible, materials found in local classrooms will be utilized. Teachers will be asked to write exercises on the board and after the pupils learn to write, pupils will be asked to copy materials from the board and, more importantly, to create some of their own reading matter.

Lesson Design

Children in standards 1, 2, and 3 will receive their English instruction via 30-minute daily radio broadcasts. Each radio lesson will consist of two parts, the radio broadcast and post-broadcast activities

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Is the Information Community Serving Farmers' Information Needs?

by Michael Laflin

As we hear more and more about the information explosion, we are reminded that it is important for disseminators (or suppliers) to respond to an increasing demand for specific and relevant information. Even though new data bases and techniques for delivery are making it increasingly possible to answer individual requests quite specifically, some suppliers still want to put their own needs and organizational priorities ahead of their clients' needs. This article addresses the issue as it relates to the information needs of farmers. H.R.

An agricultural information service operates in most countries not only on the premise that it has a body of knowledge and practices to disseminate, but also that farmers are willing recipients. Farmers are rarely considered to be information seekers. While it is true that agricultural extensionists *do* meet farmers prepared to 'buy their commodity'—I explain the metaphor later—and that new practices *are* adopted by farmers, this perspective has limitations and is based on assumptions that need examination.

Ministries of Agriculture generally take the view that, confronted by the reality of backward agricultural practices, it is their function to modernize them. The most efficient use of a small corps of skilled manpower is in research stations with a brief to develop new varieties and techniques. Less skilled people are trained as extensionists to disseminate the discoveries to farmers. Any failure of the system is put down to the stereotype of traditional peasant obduracy or poor extension staff rather than to inappropriate information. The combination of a single-purpose extension service and incentives to farmers is thought to be the solution. The most single-minded example of dissemination is the training and visit system, currently in favor within the World Bank.

Media Supplements Agents' Message

Extension agents' personal contact with farmers is supplemented by radio broadcasts, print materials, mobile film units, and demonstration plots, the totality being called an agricultural information system. All are centrally conceived, and probably produced, by a national information center, although separate systems may be created for agriculture and livestock, for example.

At the farmers' level, it is easy to lose sight of the fact that governments also have national needs, such as earning foreign exchange, and therefore want to promote the production of such export crops as coffee, tea, or pyrethrum. Farmers are encouraged to grow these cash crops to supplement subsistence crops using techniques that maximize production. Thus there is a need not merely to disseminate information, but through *selective* dissemination to steer farmers in a particular direction. This allows only limited information-seeking by farmers since the system is *directive* (in that it gives out the information it wants to) rather than receptive and willing to tailor responses to farmers' needs.

While it cannot be disputed that certain decisions are the prerogative of governments, decisions about crops and techniques ultimately rest with the farmer, at least in capitalist-oriented societies. He takes the risk so he makes the decisions. The farmer's decisions will be based on:

- adequate information (not necessarily complete, but perceived to be sufficient)
- control of sufficient resources to allow action
- the influence of others who provide a social environment which encourages or discourages a particular decision
- the impulse to act, partly arising out of the factors above, partly a function of personality.

To ask how far central agencies can influence this process is to ask the length of a piece of string. It is probably the case that many agencies, despite being aware of the role of local leaders and incorporating them into a system, underestimate the importance of friends and neighbors as sources of information and motivation, and feel threatened by them. However, research has turned the question upside down and asked to what extent official information sources *conflict* with the views of farmers. Singh and Haque surveyed farmers' perceptions of the importance of 12 items of information, and compared them with those of Village Level Workers (VLWs) and Block Level Personnel (BLP) in India. Of the twelve items, the first and last two items were ranked as follows:

Item of information	*Farmers' ranking*	*VLWs' ranking*	*BLP's ranking*
Improved seeds	1st	12th	9th
Storage	2nd	9th	11th
Soil test	11th	2nd	1st
Water test	12th	1st	2nd

Who was right is less important in this instance than the effect of conflicting priorities on the extension service's credibility. A similar result was recorded by Knight and Singh when they tested farmers and farm broadcasters from All India Radio for their views on the effect of broadcast style and content on information dissemination.

It would be easy and convenient to put the discrepancy down to poor operation of the system. But when one considers that the system is intended to provide farmers with information for decisions, that that information must be timely, relevant, comprehensible, complete, and frequent, and that farmers do not have time to take in much information that is not immediately useful, then the burden on central information systems becomes huge. Is it realistic to suppose that a centrally based system can work in any but the smallest and most homogeneous country?

In addition to the basic ambivalence between direction and serving farmers' information needs, an agricultural information service has its own internal pressures in *defining* its audience and its needs. The high echelons of government may favor commercial farmers on the basis that it is they who will best provide exports; the producers of in-

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Clearinghouse Announces New Publications

The Clearinghouse on Development Communication is pleased to announce that a selection of 45 of its *Project Profiles* has been translated into French, Spanish, and Arabic.

The *Project Profiles* are series of brief two- and three-page descriptions of development projects around the world that have had a strong communications component. In addition to a succinct description of the project, each individual profile in the collection furnishes a short bibliography and a list of contacts: names and addresses of the people who worked on the projects. The translated *Profiles* are now available for distribution to the *DCR* network. The English-language *Profiles* are to be reprinted at a later date, and will be announced in *DCR* when available.

Each of the paperbound volumes contains a detailed index which identifies the projects by country, sector (agriculture, health, integrated development, family planning, and education and human resources) and communications media used. Each volume is about 125 pages long, and is available at a cost of US $6.00 each to readers in the developed world. Readers in developing countries may request the *Project Profiles* free of charge.

To obtain copies of the translated *Project Profiles,* please write the Clearinghouse. Where appropriate, enclose a check or money order for US $6.00 dollars, payable to AED. Please specify whether you are ordering the French, Spanish, or Arabic edition. *Profiles* will be sent by surface mail. ■

formation and the extension staff will probably identify more closely with small holders since it is usually this social background from which they have themselves come. If an aid agency is involved, it will perhaps promote the interests of the poorest farmers.

However the interest struggle transpires—and it may never be resolved, leading to conflicting objectives—groups must be identified as targets. These groups will be called homogeneous according to the criteria selected. Those criteria will be based at worst on research convenience or stereotypes, or, at best, on a particular perception of reality. The actual number of groups, and the consequent sophistication of the profiles, will be dictated by the resources available to the information service and by compatibility with the production program.

Certain Groups Favored

The result is that certain groups are favored by the information service, and that the dissemination of information is necessarily generalized to agree with the producers' restricted conception of those groups as far as content, timing, and presentation are concerned.

The effect of producers' needs on the quality of information for farmer decision-making can be illustrated by the following model:

Area of Consideration	*Info. the farmer needs*		*Info. produced by nat'l agency*
Content:	Specific	⟷	General
Depth of Examination:	Explanation, interpretation, understanding	⟷	Simple statement of fact
Task Relevance:	High, great utility	⟷	Low, general interest
Problem/Solution Ratio:	Examination of options	⟷	Perception of solution
Area Specificity:	Local	⟷	National
Timing:	Specific, immediate	⟷	General, delayed
Control of Information:	By individual consumer	⟷	By producer

In drawing up these continua, I originally applied them to radio broadcasts, but they are applicable to other areas. More could be added. They are simplistic in that they illustrate only extremes, but when applying them to a system, one can add gradations.

The information needs for the majority of decisions fall on the left-hand side; ease of producing information is greater and the cost less towards the right-hand side of the continua. Implications of a move from right to left by information producers are considerable. Some of them are:

- an increasing need to be aware of the reality of consumers if the information is to be useful
- an acknowledgement of the importance of individual decisions
- the need to improve data storage and retrieval systems
- an increasing scale of, and access to, research
- the increasingly individualized access to information systems
- a move from presentation of centralized solutions to individualized problem-solving.

It might prove beneficial to the quality of information if more people viewed information as a commodity, subject to the same market forces as any other. If agricultural information producers were judged on the number of 'sales' that they had made, the delineation of the 'market' would have to be more realistic, the civil service ethos would have to be replaced by greater dynamism, and information quality would have to rise. The initiative would pass to the information seeker, the 'consumer.' The implications would ripple inwards and upwards. Extension agents given inappropriate information would complain to researchers, or in the case of badly 'packaged' information, to the media producers.

Information Services Model

Fanciful? Perhaps. Yet, the Citizens' Advice Bureaux in Britain operate on the basis that their clients are information seekers and this perspective is reflected in the service they provide. They recently carried out an experiment in rural North Wales where people are almost as remote, information-starved, poorly serviced by state agencies, and often as unable to travel as are their counterparts in the Third World. Certainly they have radio and televison, but these channels rarely provide the kind of information needed for decisions. Lacking libraries and private telephones, residents exist on information available from the local sub-post office, neighbors, the local school teacher, and the doctor and cleric who probably visit rather than live there. The experiment, which involved mobile information vans traveling regularly to several villages, parking, and waiting for customers, demonstrated three features. One, that people were often unable to act because they simply did not know of the existence of services (the old lady shivering at night because she did not know she was eligible for a heating allowance is akin to the farmer ignorant of the fact that he can claim a subsidy); two, that although it was not always possible to carry all the information requested, regular visits enabled the service to follow up requests and identify the need for specialist advice, requests which they then gave to specialist agencies for action; and three, that the service was heavily used and could operate at a cost no greater than permanent establishments in towns. The Citizens' Advice Bureaux set out to service information needs rather than shape actions and evaluated its success partly in terms of cost per inquiry.

For agricultural information services, the crux of the matter lies in conceding that it is *farmers* who decide whether to adopt a practice, not the planners, researchers, and information producers. While governments must further national needs, and their provision of information, incentives, and subsidies may hasten and influence the direction of farmers' decisions, the initiative lies squarely in the hands of the farmer. ■

For further information, contact the author at the University of Reading Agricultural and Rural Development Centre, 16 London Road, Reading, Berks., England.

Michael Laflin is editor of the *Reading Rural Development Communications* (RRDC) *Bulletin*. He has worked in audiovisual production and rural social development in Kenya, Kuwait, and England.

Toward Safe Drinking Water for All

In this, the International Drinking Water Supply and Sanitation Decade, we wish to call readers' attention to a most important source of information. IRC, the International Reference Centre for Community Water Supply and Sanitation, is an independent foundation created by the World Health Organization and the Netherlands Government, "to promote and support the creation of safe drinking water and sanitation facilities in the developing world." To carry out these activities, the IRC offers information services, technology transfer, training, community education, program planning and evaluation, workshops, a newsletter, and a Technical Paper series. The technical papers, handsome documents of great value to the community program planner for water and sanitation, now number 18, and are available, as are the other services, from IRC, P.O. Box 5500, 2280 HM Rijswijk, The Netherlands.

Another information source for readers concerned with the problems of drinking water and sanitation is the United Nations Development Programme's Division of Information. Their list of available Information Material includes briefing documents, special issues of various UN publications, case histories, films, and other items that deal with the Decade's topic. Address requests to UNDP, Division of Information, Room CD-1872, One United Nations Plaza, New York, N.Y. 10017, USA. ■

Educational Communication Development In Indonesia: A Multimedia Approach

by Yusufhadi Miarso and John Middleton

Expanded access to educational opportunity and increased quality of education are central goals for educational development throughout much of the world. In Indonesia, these goals are extremely important. The fifth most populous country in the world, Indonesia stretches some 3600 miles across several major and some 3000 smaller islands. Since achieving independence in 1945, the nation has demonstrated an extraordinary commitment to education. Between 1950 and 1977, primary enrollments were expanded 400%, reaching near-universal coverage of the age group. Secondary enrollments were increased 18-fold, and the number of university students increased by a factor of 57.

As Indonesia entered the 1980s, the literacy rate was about 64%, and even higher among younger people. The massive expansion of the school system had created a firm base for continued educational development. However, significant challenges remained. Despite rapid expansion, the large majority of secondary school-age children could not find places. Access to higher education was even more limited, creating a serious shortage of trained persons for national development. Moreover, despite a massive project in curriculum development, textbook preparation and dissemination, and teacher training at the primary level, the quality of education lagged behind the quantitative growth of the system.

The government has taken firm steps to deal with these challenges. High priority has been given to school expansion, textbook development, and teacher training at the secondary level, and to development of higher education.

The potential of educational media and technology was recognized early in the 1970s as an alternative means of both expanding access and improving quality. Beginning with experimental projects using radio for primary instruction and for teacher training, Indonesia has given rapidly increasing support to the use of educational technology throughout the educational system.

Today, the Indonesian Center for Communication Technology in Education and Culture (commonly known as PTKPK) is charged with the responsibility for coordination and action for the application of communication technology to problems of education. The role of PTKPK is to develop and test technology-based alternative solutions to educational problems, to lead in the development of trained personnel, and to coordinate activities in the field of communication technology both within and outside the Ministry of Education.

PTKPK Activities

Institutionalized as a Center of the Ministry of Education in 1978, PTKPK operates from a new facility near Jakarta through an extensive network of decentralized regional radio and television production facilities, provincial Learning Resource Centers, and cooperative relationships with units of the Ministry of Education and Indonesian universities and teacher training institutes. PTKPK has a staff of more than 250 employees, nationwide.

PTKPK is engaged in a complex and extensive set of activities. Of chief importance are the action and demonstration projects through which alternative roles for communication technology are tested and demonstrated. Currently, PTKPK manages eight major projects:

- *Open Junior Secondary School:* A three-year pilot project enrolling more than 2000 students is currently nearing completion. Designed to reach students whose access to secondary education is limited by factors of geography and a current shortage of classroom space, this project delivers education to village learning groups through self-instructional modules, radio, cassettes and slide/cassette programs. Learning groups are attached to a "mother school," where students receive advanced subject matter instruction once a week.
- *Primary Teacher Training by Radio:* In operation for more than five years, this project provides broadcast radio inservice training to primary school teachers. Radio programs are supported with simple print materials. The project currently operates in 11 provinces and is designed to reach about 70,000 teachers.
- *Non-formal Education:* In cooperation with the Adult and Community Education Division of the Ministry of Education, PTKPK provides radio support for rural learning groups in 20 experimental sites. Programs are written and produced on a decentralized basis and, like all PTKPK radio, are broadcast in cooperation with the national radio network (RRI), primarily through provincial and local stations.
- *Children's Television:* In cooperation with Unicef, PTKPK is producing 17 half-hour programs on the theme of character development. Designed for open-broadcast, these programs use drama to bring the theme of character development to rural and semi-rural children. Topics include problem-solving, initiative, acceptance of responsibility, and self-image. Currently produced in ¾-inch videotape format, these programs are providing an opportunity for extended on-the-job and formal training in educational television design and production.
- *Public Television:* PTKPK is also producing TV series on environmental problems and on basic development skills for broadcast from the TV Republic Indonesia (TVRI) station in Surabaya, East Java. These programs are produced on 16mm film. In addition, PTKPK co-produces with TVRI Surabaya a weekly live "development quiz" series.
- *Higher Education:* Support to higher education development is provided in several ways, including assistance with closed-circuit classroom instruction, in-service training of university lecturers, and planning for a variety of distance learning projects, including a proposed Open University. PTKPK is also assisting in the establishment of educational technology programs at several universities.
- *Training:* A major mechanism for the diffusion of educational technology concepts and techniques is training. PTKPK develops and leads training programs in instructional development and media production and utilization for a wide range of clients both within and outside the educational setting.
- *Policy Communication:* Further diffusion comes through the development of media, principally film and slide/cassettes, to spread knowledge of educational innovations among audiences which include both professionals and the general public.

The level of activity required by these projects is evident from the production achievements of fiscal year 1980-81: over 1000 radio programs, 150 slide/cassette programs, a dozen films and an equal number of prototype television programs, more than 400 different print modules, and training for more than 400 persons.

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Institutional Development

PTKPK faces the need to develop institutional capability while maintaining a high volume of support to education. In seeking to become a center of excellence in instructional development and media production education, PTKPK, like all new organizations, needs to expand the pool of trained persons, upgrade available technology, and evolve patterns of working which enable resources to be effectively applied through educational communication projects.

The process of institutional development began early, and will continue for some time. A significant phase came with a USAID-supported project with Syracuse University in 1976-78, through which 20 Indonesian educators received advanced graduate training in educational technology.

Further impetus has been gained with the Educational Communication Development Project (ECD) which began in 1980 and finishes at the end of 1983. This project is being implemented by the Academy for Educational Development (AED) under contract to USAID Jakarta, which is co-funding the project with the Government of Indonesia.

New Media Resources

The ECD Project has three major components: commodity/equipment purchase, training, and technical assistance. Radio, television, and graphic equipment is being purchased and installed in newly constructed facilities. This new technology will give PTKPK full professional production capability by early 1983. In addition, the PTKPK book, journal, and media resource collection is being greatly expanded: technical book collections are being established in PTKPK production and learning resource centers, and basic educational technology libraries are being established in some 17 cooperating universities and teacher training colleges.

The University of Southern California, under a sub-contract with AED, is providing MA and Ph.D.-level training for 26 students in cooperation with the Jakarta Institute of Teacher Education (IKIP Jakarta). This component consists of 17 graduate courses taught in Indonesia by USC faculty as part of the graduate program of the IKIP, which grants degrees. Included is a summer of advanced study in the U.S. In addition, a variety of short-term non-degree training is being provided, including a summer of advanced graduate study at Indiana University for nine additional Ph.D. students.

The third component is technical assistance. An AED field team with expertise in planning, instructional development, research and evaluation, library and information science, film and television production, and television engineering works closely with colleagues at PTKPK to develop and strengthen institutional capabilities. Additional short-term consultants are called upon as needed, and have contributed to educational television design, formative evaluation, staff development in higher education, and Open University planning.

Overall, the ECD Project rests on four principles of action. First, through mechanisms of joint funding, all project components are *integrated* into the work of PTKPK and cooperating Indonesian institutions. This integration requires *cooperation* among the many institutions involved in project planning and management. The thrust of all efforts is toward *institutionalization*—of technology, of training, and of technical assistance. The graduate training component, for example, is strengthening graduate education in educational technology in Indonesia through joint planning and curriculum development, teaching materials development, and involvement of Indonesian faculty in advanced study and co-teaching.

In the end, it is recognized that institutional growth is a difficult and time-consuming process, one which must be firmly anchored in the reality of present constraints and opportunities, and which emphasizes gradual and steady growth. Thus the fourth principle is *incremental systems development,* in which procedures for the design, development, and production of educational media are introduced slowly and carefully, with emphasis on adaptation to fit with Indonesian needs and constraints.

The history of development of PTKPK, like the history of development of Indonesian education, is one of rapid advance under difficult constraints. Current efforts represent an important stage in the development of educational communication in Indonesia. It is a stage which rests on a record of earlier accomplishment and which, hopefully, will contribute in significant ways to more effective use of technology as Indonesia continues to expand and improve the quality of educational opportunity. ■

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Development Communication Report, published quarterly by the Clearinghouse on Development Communication, has a circulation of over 6,000. Subscriptions are available free of charge to readers in the developing world.

A center for materials and information on important applications of communication technology to development problems, the Clearinghouse is operated by the Academy for Educational Development, a nonprofit planning organization, and supported by the Bureau for Science and Technology of the U.S. Agency for International Development as part of its program in educational technology and development communication.

Readers are invited to submit typed manuscripts of no more than 1000 words, and to send in photographs.

Latin American Action: Communication Training

Spanish or Portuguese-speaking readers of *DCR* looking for training courses in educational communication may wish to check with the following organizations.

In 1982, the Instituto Latinoamericano de la Comunicación Educativa (ILCE) will be offering a series of courses within three broad program areas: "Development and Production of A-V teaching Materials," "Development and Production of Low-Cost Media," and "Development and Production of Educational Radio Programs." These courses may be taken singly, or as part of a complete program. ILCE may be contacted at Apartado Postal 94-328, México 10, D.C., México.

For the third year, the Centro de Servicios de Pedagogía Audiovisual para la Capacitación (CESPAC) in Lima, will be giving a five-month intensive course in Video for Teaching and Training. CESPAC encourages the nomination of two participants from any interested Latin American institution or organization, so that a two-person team will result from the training. Registration closes May 1st, 1982, for the course which will begin in June. Information on the course is available from CESPAC, Apartado 4480, Lima, Perú.

The Catholic University of Peru has a Centro de Teleducación where students may receive complete training in the planning and production of educational television programs. In the past, the training was given over the period of an academic year. For further information contact CETU, Apartado 12514, Lima 21, Perú.

We have received an announcement from the Latin American Center of Educational Technology for Health that a catalog will be forthcoming of the 19 week-long courses to be offered from March through November 1982. Subjects to be covered include "Simulations in Health Education," "Introduction to Audiovisual Media in Education," and "Educational Technology and Human Resources for Primary Health Care." To request a catalog, write to NUTES/CLATES, Caixa Postal 80002, ZC24 Rio de Janeiro, Brazil.

Readers with an interest in appropriate technologies for development may wish to know about the Centro Andino de Tecnología Rural (CATER) in Ecuador. In collaboration with the National University of Loja, CATER will offer a four-month postgraduate course focusing on strategies of rural development, to be given April through July, 1982. CATER is also planning a seminar (5-11 April 1982) on Alternative Technologies for Rural Construction. For information about these activities, contact CATER at Casilla 399, Loja, Ecuador. ■

A Communicator's Checklist

1 *Bold Experiment—The Story of Educational Television in American Samoa,* by Wilbur Schramm, Lyle M. Nelson, and Mere T. Betham (Stanford, California, Stanford University Press, 1981), 244 pp.

America's treatment of its territories has been marked by alternating periods of "benign neglect" and infusions of cash and kind to make up for that neglect. The "Bold Experiment" chronicled in this well-written and thoroughly researched book was as much a result of America's neglect as it was a potential solution to that neglect. The pervasive and revolutionary use of television as the primary mode of instruction in American Samoa began in 1964, the brainchild of the then-Governor Rex Lee. After years of disinterest in the Pacific territories by official U.S. policy makers, President Kennedy's administration was marked by attempts to make up for that neglect on a grand scale. Something had to be done, and educational technology was an idea whose time had come.

In the eyes of well-meaning American educators, American Samoa's school system was sorely inadequate. Ramshackle buildings, poorly trained teachers, and cast-off textbooks were the rule. Because the only textbooks that could be had were in English, instruction was provided in English by teachers who could not speak it. Learning was by rote. Governor Lee proposed a bold solution, which in effect "threw the baby out with the bath water." The entire existing school system was abandoned, and in the space of two years television became the primary mode of instruction.

Originally, the plan called for at least one year of advance planning and teacher training, but this never happened. Curriculum was designed in the summer of 1964 for classes scheduled to begin that fall. Moreover, Samoan classroom teachers and supervisors were almost entirely excluded from the planning and design process, an oversight that resulted in damaging political infighting later on. By October of 1964, American Samoa was transformed from a relatively technology-free environment to a country that had in place a full-fledged television system reaching the remotest corners of the six islands of American Samoa and parts of Western Samoa. Construction of a television transmitter, a sophisticated studio production facility with the latest equipment, and four new school buildings with television receivers was completed by 1964. By 1967, 24 of the 26 proposed new schools were completely finished and ready to receive television instruction.

The teaching burden necessitated by this speed was enormous. Studio teachers were responsible for between 10 and 15 programs a week.

While the experts in charge of producing this educational innovation intended to include the Samoans in the development, this never seemed to happen. Lesson plans were created without much knowledge of Samoan culture and values, and Samoan teachers were instructed to follow them to the letter with no deviation. Samoan teachers used to decades of running their schools with little interference were monitored mercilessly in the early stages of the experiment.

Teachers felt very frustrated. They saw that some students needed to review material provided by the television instruction more carefully and other students were ready to go on to something else. The constraints of the system did not allow them to act on these judgements. Any attempts by the classroom teacher to modify the structure were viewed very critically. The result was that some of the most experienced Samoan teachers became the biggest critics of the innovation. Indeed, as the authors point out, the innovation itself—educational television—was the biggest inhibitor of innovation.

Perhaps the most tragic result was that the most significant aspect of any culture—its language—was forced by the innovation of television instruction to assume a secondary role. English was the language of the "experts," and the teaching materials were available only in English. To keep pace with the experiment, English became the primary language of instruction. There didn't seem to be enough time to develop materials and instruction in Samoan.

Given the benefit of hindsight, development communicators today are struck by the lack of apparent consideration of other equally effective alternatives that might have proven less costly in terms of cash and gut-wrenching social upheaval that took place in Samoa. However, the decision to use educational television was not made in a vacuum. The experiment yielded positive as well as negative effects, and many demonstrable benefits to the people.

Without doubt, ETV was responsible for a major positive turnaround in the quality of education available to children. If it perhaps did not live up to all the hopes, it was clearly responsible for some improvements. The dramatic increase in per pupil expenditure from $50 in 1961 to $1,041 in 1980, and the total modernization of the Samoan educational system's physical plant are results of ETV. "Bold Experiment" provides excellent data on teachers' and students' attitudes toward television, student performance, costs, and evaluation of the effects of the program. The authors' view is one that balances and does not judge:

> ". . . our impression remains that the way to look at the Samoa development is not in terms of good and bad, but rather in terms of lessons to be learned from the experience. In short, what can another country, considering the use of television for instruction, learn from what took place in Samoa?"

This book is a thoughtful and well-documented account of both the effects of television on learning, and the lessons that can be learned about the social effects of change in developing countries. It is highly recommended. ■

Reviewed by Arlene Horowitz, a Program Assistant at the Clearinghouse on Development Communication, and previously the Washington liaison for the U.S. Territories at the Council of Chief State School Officers.

Available for US $17.50 prepaid from Stanford University Press, Stanford, California 94305, USA.

2 *Script Models: A Handbook for the Media Writer,* by Robert Lee and Robert Misiorowski (New York, Communication Arts Books, Hastings House, 1978), 96 pp.

Script Models: A Handbook for the Mass Media Writer is a script style book. It handles its material in a straight-forward manner, supplying explanatory notes on each medium and tips for the writer, followed by script excerpts. The 25 script models include actual samples of film-scripts, non-theatrical documentaries, technical and instructional motion pictures, television and film screen plays, and radio documentaries. For information beyond the technical detail of script style—e.g. the format necessary for submission to a producer, director or agent—the reader will have to consult other texts. *Script Models* touches briefly on questions of copyright registration and agents, and provides a useful glossary of media vocabulary. The annotated bibliography of periodicals is possibly the most useful resource here—sending the reader to other sources for more detailed information. ■

Available for US $8.95 clothbound and US $4.95 paperbound from Hastings House Publishers, 10 East 40th Street, New York, NY 10016, USA.

Reviewed by Rosanne Skirble, a producer/writer for the Voice of America in Washington, D.C.

3 *Writing for the Media,* by Martin Maloney and Paul Max Rubenstein (Englewood Cliffs, N.J., Prentice-Hall, Inc., 1980), 292 pp.

Writing for the Media is addressed to those interested in writing and producing slide-tape productions, 8mm or 16mm films for educational and promotional purposes, documentaries, and various kinds of audio and video recordings. The extremely readable text looks at the world of broadcasting, particularly the U.S. market, with helpful hints on the business of writing and basic "how-to's" of getting and completing an assignment. Up-to-date script illustrations from both commercial and educational broadcasting give precise explanations on format, dramatic structure, conflict and movement, dialogue, and narration.

Where *Script Models* tends to isolate the format from the writer, *Writing for the Media* orients the writer to the creative and technical process. The results—a practical handbook for the prospective writer as well as for the experienced producer. A valuable appendix deals with the writer's qualifications, proposal writing, the television pilot script, the television documentary script, the industrial film script, and includes a glossary of media terms. ■

Available for US $16.95 from Prentice-Hall, Inc., Englewood Cliffs, New Jersey 07362, USA.

Reviewed by Rosanne Skirble, a producer/writer for the Voice of America in Washington, D.C.

4 *Education and Social Change: A Photographic Study of Peru,* by Deborah Barndt (Dubuque, Iowa, Kendall/Hunt Publishing Company, 1980) 392 pp.

Note: The December issue of DCR contained a thoughtful review of Education and Social Change which evaluated the book from the perspective of author Brandt's commitment to Freire's "conscientization" process as an educational methodology leading to radical transformation of society. This review looks at the book quite differently; it examines the dynamics of teaching techniques presented in the book, and discusses their possible value to development communicators.

In this book, Deborah Barndt explores the dynamics of the 'conscientization' process. Conscientization is the term used by Paulo Freire to describe the emerging critical consciousness which leads to radical transformation of society. He first used the term in the early 1960s in Northeast Brazil when he was helping illiterate peasants to learn to read and write, as well as to analyze and begin to change their socio-economic situation.

Barndt's focus for exploring the conscientization process is a series of interviews with four Peruvian peasant women who are recent migrants from their mountain villages to Santa Ana, a shanty-town outside of Lima. All of these women are participants in a literacy class. The year is 1976, a time of great social unrest in Peru.

As stimulus and guide for her interviews, Barndt uses a 14-page photo-novel she has prepared from pictures of Santa Ana and other towns in Peru. The photo-novel tells two stories—one of the events in a modern literacy class and the other of events in a traditional class.

Barndt recreates the interviews for us. We hear the concerns of these women about learning to read, acquiring title to their land, getting clean water, having medical services, and above all being able to give a better life to their children.

Barndt's analysis takes two forms. One is in terms of reflection and action; the self and society. The other is in terms of the stages of the conscientization process: 1) Description; 2) Personal association; 3) Social relations; 4) Contrasts and contradictions; 5) Analysis of problems; 6) Exploration of alternatives; 7) Critical action.

We see that Señora Rosa is in the early stages of the process. Speaking meekly and with little detail, she either describes what is happening in the pictures or offers some personal association. She rarely moves on to social issues or analysis. At the other extreme is Señora Cristina, a self-confident woman who speaks volubly to the interviewer and who begins at the level of social relations and quickly moves on to critical action. Indeed, she focuses on actions she and her neighbors must undertake to improve their lives. The other two women are somewhere in between.

This, then, is the essence of the book. However, there is much, much more between the covers: the history of Peru from the Incas through the economic and political changes of the 1970s; the Peruvian educational system; literacy institutions and methodologies; uses of the photo-novel; an ethnographic description of Santa Ana; a critique of the work of Freire. All are amply illustrated with photographs of Peruvian life.

Who will want to read this book? Development communicators will be interested in the possibilities of the photo-novel for teaching, and for training of workers, teachers of literacy, or agricultural extension agents. Sociologists will be interested in the methodology and analysis of the perceptions of these four women. Literacy specialists will be interested in the different approaches and institutional conflicts of the literacy programs in Peru. Students of Freire will be interested in Barndt's application of his theories.

However, persons wanting to know about "Education and Change" in Peru may be disappointed. The focus is on the lives of the people of Santa Ana. Other events are sketched only to place the people of Santa Ana in their "socio-economic context," to use Barndt's words. Thus, the title promises more than it delivers.

But others—development communicators, sociologists, literacy specialists, students of Freire—will find the book, both text and photographs, interesting and appealing. ■

Available for US $19.95 from Kendall/Hunt Publishing Co., 2460 Kerper Blvd., Dubuque, Iowa, 52001, USA.

Reviewed by Nadine Dutcher, coordinator of the English Language Program at the World Bank and a Peace Corps Volunteer in Peru in 1964-1966.

5 *Understanding Pictures in Papua New Guinea,* by Bruce L. Cook (David C. Cook Foundation, Elgin, Illinois, 1981), 113 pp.

Bruce Cook is a researcher with a particular interest in picture communication. His monograph *Understanding Pictures in Papua New Guinea* is the result of an attempt to answer the question: "What kinds of pictures communicate most effectively with people who have little or no pictorial experience?" The monograph begins with a description of the remote areas that provide context and subjects for the study. The research design is carefully described and practical reasons presented for varying from strict, rigorous methodology. All of the pictorial materials used are pictured in detail, although the colored versions are reproduced in black and white. The author presents findings about subjects' background and experience, and their reactions to specific art styles: stick figure, faceless outline drawing, detailed black-and-white drawing, detailed black-and-white drawing with watercolor wash, and black-and-white photographs.

Subjects' reactions to various pictures are followed by a listing of some rules-of-thumb derived from the research.

1. Sociological and educational differences have the most effect on picture understanding.
2. Pictures of people should be used because they are easily understood.
3. Picture content affects understanding more than art style.
4. Art style affects preference.
5. No single art style is best for non-literate people.
6. If an artist had to choose art style on the basis of this study, realistic art (detailed black-and-white line drawings) would seem best.

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7. Publication and distribution of comic book pictures can help develop understanding.
8. A single picture shouldn't be used to show a lapse of time.
9. Viewers may not recognize a cause and effect relationship between two pictures.

Each "rule" is dicussed and explained.

In addition, Cook lists a dozen rules-of-thumb derived from other studies, and includes a section on research and interviewing techniques which would be particularly helpful to inexperienced field personnel. The study concludes with a variety of suggestions for future research.

In answer to the question that prompted this study, "What kinds of pictures communicate most effectively with people who have little or no pictorial experience?", the general conclusion is that art style and content do make a difference in picture understanding, but only after one considers the subjects' environment, sociological background, personal interest, needs, and experience.

While the results of Cook's study are specific to Papua New Guinea, they are of interest to anyone concerned with communicating ideas to persons in other cultures. One important value of this monograph is in the points that are raised which should concern all persons developing visual materials to use in a teaching/learning situation. To this writer, the following ideas are of greatest importance. When attempting to communicate to an audience of another culture we should:

1. Clarify our objectives
2. Understand our audience as well as possible
3. Be aware of the media variables that can affect communication
4. Constantly evaluate materials with representative samples of the audience.

It has been said that words are only sounds until they are invested by people with meaning. In the same way, pictures have no meaning except as people interpret them. For this reason, there can be no inflexible rules for communicating effectively . . . only intelligent approaches. This book is one such intelligent approach. ■

Available for US $8.95 from the David C. Cook Foundation, Cook Square, Elgin, Illinois 60120, USA. The book is offered to mission agencies, development communicators, specialists, and instructors at a special rate: 1-4 copies, 10% off; 5-9 copies 15% off; 10-24 copies, 20% off; 25-49 copies, 25% off; 200 copies and over, 40% off. Prepaid orders include shipping.

Reviewed by Dennis W. Pett, Director of Instructional Services at the Audio-Visual Center, Indiana University.

Print Communication from Latin America

In the aftermath of the appearance of the MacBride Report, which itself followed long months of heated debate on the North-South information flow, healthy signs of alternative communication energy are appearing on the Latin American scene.

A most welcome reappearance among communications publications is *CHASQUI,* a Latin American journal (in Spanish) of communication. After a long hiatus, the joint efforts of the Centro Internacional de Estudios Superiores de Comunicación para América Latina (CIESPAL) and the Friedrich-Ebert Foundation are producing a quarterly publication whose aim is to provide an interchange of information and experiences in the community of social communicators.

A good deal of the first issue is devoted to the MacBride Report, and to those issues of the press and alternative journalism relative to the New World Information Order. Useful sections are devoted to book and periodical reviews, a calendar of communication events, and pertinent news of the region. Although this maiden effort deserves strong support from the communications community, we hope that subsequent issues will follow standard publication practice, and credit the sources of the graphics. Professionals in this field should know better.

Subscription information is available from CIESPAL, Avenida Almágro y Andrade Marín, Quito, Ecuador.

An important segment of the Latin American communications community is ILET, the Instituto Latinoamericano de Estudios Transnacionales, located in Mexico City. They have initiated a new documentation service that they call *ALTERCOM,* to support their "alternative communication" projects. An issue of *ALTERCOM* (in Spanish) will typically contain a dozen news "shorts" in such areas as International Relations, New Technologies and Development, Latin American Economy, Transnational Expansion, etc.

For more information about *ALTERCOM,* contact ILET, Apartado Postal 85-025, México 10,200, D.F., México.

Costa Rica is the home of an organization concerned with equitable access to and allocation of telecommunications resources. The Center of Telecommunications for the Third World (CETTEM) publishes a newsletter (in English and Spanish), maintains an information center for relevant documentation, and formulates positions on telecommunications issues that they hope will be consistent with the needs of users, rather than suppliers of the technology.

For further information, contact CETTEM, Apartado 7981, San José, Costa Rica.

by Judy Brace ■

Distance Learning Documented at IDC: Resources Available

The International Documentation Centre (IDC) has been in existence since June 197[illegible] but its current title was only adopted on [illegible] April 1981, when Great Britain's Open University assumed responsibility for its funding. In April 1981 there were approximately 6,000 items in the IDC's stock. The collection comprises:

- Documentation on distance learning projects worldwide, at all educational levels. The majority of the material in this area is published by international agencies, national and regional organizations, government departments and individual institutions, and comprises monographs, journal articles, research reports, annual reports, course handbooks, etc. There is also a small section containing works of a theoretical nature on distance learning.
- Course materials produced by institutions which teach at a distance. This section includes audio and video cassettes as well as printed materials.
- Documentation on education systems in all countries, comprising primarily reports from international agencies and national governments, journal articles and newspaper cuttings, providing background information on educational provision in t[illegible] context of which distance learning proje[illegible] have been established.
- Documentation on major social and political developments worldwide, comprising primarily reports of agencies and national governments.

The IDC is involved in a number of activities in addition to the collection and processing of documents. A regular accessions list is published and distributed, and during the last two years an occasional newsletter has been produced.

Requests for information made in person, by telephone, and by letter are received with increasing frequency from Open University staff, and from other institutions and individuals in the United Kingdom and overseas.

A wide network of contacts has been established, and an important function of the IDC is the maintenance and extension of these contacts.

Inquiries about the IDC, its resources and services, are welcomed and should be addressed to:

Keith Harry, IDC Documentation Officer, Room Q229, M Block, The Open University, Walton Hall, Milton Keynes, MK7 6A[illegible] U.K.

Excerpted with permission from IBEDOC Information, *Liaison Bulletin of the International Network for Educational Information (INED), No. 26, Sept. 1981.*

(continued from page 1)

ARAB STATES

- Arab Project for Communication Planning and Exchange (ACPE) $56,000
- Arab States Regional Broadcasting Training Center $30,000

ASIA AND PACIFIC

- Asia-Pacific News Network $80,000
- Pacific Radio News Exchange (Funding to be negotiated with the Government of Australia)
- Regional Bank of Films and Television Programs in Asia and the Pacific $100,000

LATIN AMERICA AND CARIBBEAN

- Caribbean Regional Project for Broadcasting, Training, and Program Exchange $45,000
- Creation of Latin American Special Information Services Agency (ALASEI) $70,000
- Center for Communication Research and Application (Mexico) $40,000
- Center for Automated Publishing and Translation $10,000
- Training of Technicians for the Development of Communication at the Community Level $15,000

INTER-REGIONAL PROJECTS

- ITU Study of Communications in Rural Development $30,000
- Feasibility Study on Facilities for International Dissemination and Exchange of Information by Global Satellite Systems $20,000
- Center for the Study of Communication, Energy, and Space Technologies (Unesco to provide funds for further study.)
- In addition, $125,000 was allocated for determination of needs, preparation of projects, and training activities.

NATIONAL PROJECT

- Zimbabwe Broadcast Training Department, Institute for Mass Communication (Funding to be negotiated with the Government of The Netherlands.)

This array of approved projects encompasses the press, radio and television broadcasting, films, telephony, and satellite communications. Several projects will link developing nations with each other for news exchange and training. Many have a general communications focus; a few center on rural development. Assistance will go for training, local institutional support, and several other kinds of aid. In addition, funds totaling $169,000 for the first year were allocated for training and project development. In these initial grants, the development of regional news exchange operations were a top priority, a priority wholly agreed upon after assurances that the regional operations would not be used to exclude national access to the international news services, but instead to increase the news and perspectives available to public and private media throughout the world.

Of special interest, perhaps, to readers of *DCR* are the following funded projects: a regional African activity in Kenya designed to develop low-cost rural radio broadcasting equipment; the continuation of ITU's (International Telecommunications Union) studies of the effects of rural communications on development; a study of the proposed Arthur C. Clarke Center in Sri Lanka to train LDC experts in appropriate satellite communications technology; and a project for experimental worldwide satellite transmission of news as early as the fall of 1982, using existing systems such as INTELSAT or INTERSPUTNIK. The several regional training centers and the Asian film and video exchange are also likely to have important applications for development uses of communications.

Participation and Harmony

The importance of the IPDC was emphasized by the participation of key officials from around the world. The meeting was opened by President Lopez Portillo and Unesco Director General M'Bow. The Director General of INTERSPUTNIK came from Moscow, and INTELSAT sent two senior officials. The Deputy Director General of the ITU was actively involved throughout, as were representatives from other key international organizations.

International press coverage was extensive, with Western press coverage including *The New York Times, Time Magazine,* and the major wire services. The press may have come in part to see conflict; they instead saw a rather remarkable harmonization of differing national perspectives around the building of communications capacities in the developing world.

Funds

Contributions both to the IPDC Special Account and to specific projects now total about $6 million. France and the Arab Gulf States were the largest contributors, each with a multi-year pledge of $2 million. Many developing countries also made pledges, as did the Soviet Union and China. In addition to Special Account contributions, many countries are contributing fellowships and consultancies. The United States made an initial contribution of $100,000, to be administered by USAID. Further U.S. funding is being sought in part through private sector contributions of services and funds.

Going into the Acapulco meeting, there were major anxieties about the IPDC. Many in the press, particularly in the West, were concerned that the IPDC might become a platform for some programs that could reduce, rather than expand, freedom of information. The developing world was concerned about the reluctance of the West to provide sufficient support to make viable the new institution. While these anxieties have not entirely disappeared, the experience of Acapulco was genuinely encouraging. Important practical programs were agreed upon, by consensus, across all political spectra. The press was greatly reassured. The shape of the new institution will become more clearly defined in coming months, as will the character of Western support; the next meeting of the Council will occur in December 1982 in Paris. For now, however, the prospects for the vitality and effectiveness of the IPDC are excellent. ■

Clifford H. Block is the Associate Director for Development Communications, Bureau for Science and Technology, Office of Education, AID, Washington. He was a U.S. delegate to the January 1982 IPDC Council Meeting.

Rural Training in The Philippines

The International Institute of Rural Reconstruction in The Philippines has announced its 17th International Leadership Training (ILT) Institute, to be held August 25 to October 16, 1982, in Cavite.

ILT is for men and women actively engaged in promoting change at the village level. Emphasizing the "how-to" of integrated rural development, the program encourages participants to share skills in group-building and problem-solving. A survey of selected rural development programs throughout the world serves as a conceptual framework for analyzing rural development issues and strategies. Conducted in the rural Philippines one hour south of Manila, the course includes a one-week practicum during which the participants live and work with villagers.

The courses will be conducted in English, and the cost of the training (which does not include travel to the Philippines) is US $1,975. A limited number of partial fellowships is available.

For further information, contact: Gael L. Williams, Director for International Training, IIRR, Silang, Cavite, Philippines.

On File at ERIC

The production and use of instructional materials and educational broadcasting programs, a thesaurus for processing information on development, and a description of program in educational technology are the focus of reports from the Educational Resources Information Center (ERIC) files reviewed in this column. All are available on microfiche from the ERIC Document Reproduction Service (EDRS), P.O. Box 190, Arlington, Virginia 22210, USA. Some are also available in paper copy.

- ***Low-Cost Educational Materials: How to Make, How to Use, How to Adapt. Inventory, Volume I.*** Bangkok, Thailand: Unesco Regional Office for Education in Asia and Oceania, 1980, 157pp. (ED 205 166)

Instructions with line drawings and/or patterns are provided for making 85 of the exemplar products prepared in workshops sponsored by the Asian Programme of Educational Innovation for Development (APEID). These workshops were held to review current efforts and materials and explore new strategies and directions in the utilization of low cost, simple, indigenous materials to fill the regional need for audiovisual resources. The items described include hand-made educational charts, maps, models, improvised science apparatus, kits, educational toys, and games for children. Information provided for each product includes a brief description, objectives, materials needed, how to make it, how to use it to meet specific objectives, and suggestions for modifications to fit the local situation. Available from EDRS in microfiche for 91¢ plus postage.

- ***Production and Utilization of Educational Broadcasting Programmes. Report of an APEID Technical Working Group Meeting on Educational Broadcasting (Kuala Lumpur, Malaysia, November 19-December 1, 1979).*** Bangkok, Thailand: Unesco Regional Office for Education in Asia and Oceania, 1980. 61pp. (ED 205 164)

Members of the Technical Working Group representing 14 Unesco member states met to: (1) review and discuss major problems, issues, and prospects in the region for educational broadcasting; (2) identify training needs for promotion of educational broadcasting; and (3) develop guidelines for the production, use, and evaluation of educational radio/television programs for facilitating the programs of universalization of education and integrated rural development. This report presents the highlights of each country's experiences in educational broadcasting; discussions of common problems, issues, trends, and training needs; and guidelines formulated by the participants, together with recommendations and suggestions. The appendices include the agenda of the meeting, a list of the 18 participants, and the inaugural address by the Deputy Minister of Education of Malaysia. Available from EDRS in microfiche for 91¢ plus postage.

- Viet, Jean, Ed. ***Macrothesaurus for Information Processing in the Field of Economic and Social Development. New English Edition.*** Paris: Organization for Economic Cooperation and Development, 1978. 444pp. (ED 206 276)

This new edition has the same purpose as its predecessors, i.e., to provide language for use in processing information relating to all aspects of economic and social development, and, at the same time, give a common dimension to the more specific vocabularies corresponding to each of these fields. However, it differs from previous editions on five major counts: structure, field coverage, choice of national languages, numbers and form of descriptors, and printing. The structure provides alphabetical, descriptor group, and hierarchical displays, and a KWOC (Key Word Out of Context) index including scope notes, broader, narrower, and related terms, and synonyms. The fields of study are further developed in such areas as population, health, environment, cultural development, communication, education, and energy conservation. The three languages used are those considered the most significant and widely used in development literature: English, French, and Spanish. German has been dropped. The number of descriptors has doubled, despite removal of obsolete and irrelevant terms. Precoordination is used for precision where necessary, plurals are preferred to singular forms, the number of related terms has been increased, the hierarchy has been improved, and the scope notes have been revised to reduce ambiguity. Capital letters are used throughout in heavier and lighter print to increase readability. Available from EDRS in microfiche for 91¢ plus postage.

- Johnson, Jenny K. ***Masters Curricula in Educational Communications and Technology: A Descriptive Directory.*** Syracuse, New York: ERIC Clearinghouse on Information Resources, 1981. 382pp. (ED 205 168)

This source book provides the name, location, and breakdown of course offerings and credit hours needed to complete each of the 154 university masters programs in educational technology that responded to a survey conducted in 1980 by the International Division of the Association for Educational Communications and Technology (AECT). Information is also provided on degree prerequisites, credit transfers and program duration, areas of emphasis in the curriculum, and instructional evaluation techniques used in the program. A list of faculty members for each institution notes their degrees and research interests. Two programs are listed in Australia and one each in Canada, Colombia, Hong Kong, and Nigeria, as well as one or more in each of 41 states and the District of Columbia. A frequency table of course characteristics is provided as a summary at the end of the individual program section, and a copy of the questionnaire is attached. Available from Information Resources Publications, 130 Huntington Hall, Syracuse University, Syracuse, New York 13210, USA, for $12.00, or from EDRS in microfiche for 91¢ or paper copy for $26.75 plus shipping.

Barbara B. Minor, Publications Coordinator, ERIC Clearinghouse on Information Resources, School of Education, Syracuse University, Syracuse, New York 13210, USA.

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directed by the classroom teacher. There will be 165 new lessons developed for each of the three years.

In order to retain interest during the length of the broadcast, the Radio Mathematics Project had great success with segmented learning periods requiring active participation by the students. The RLAP will follow this design, planning for as many as four to eight pupil responses per minute in some segments. Learning segments will be interspersed with change-of-pace activities such as singing and clapping, choral and motor activities which will utilize language skills and vocabulary previously taught, and provide the participatory activity so necessary for young pupils.

Role of Classroom Teacher

Recognizing that teachers' education, professional training, and skill in the English language will vary greatly, the radio lessons are designed to provide the major instruction. But teachers will have important functions to perform, since their attitude toward and participation in the radio lessons will influence their pupils' reactions and enhance the effects of the radio programs.

A teacher's guide will provide classroom teachers with information about each lesson and suggestions for their participation. Teachers will be asked to assist in preparing the classes for each broadcast. During the radio lesson they will be urged to participate actively, and directions specifically for teachers will be included in the broadcasts. After each broadcast, teachers will direct additional language exercises, oral and written. Specific vocabulary and learning exercises will be displayed in the teacher's guide, but teachers will be encouraged to adapt them according to the needs of their children.

Evaluation

The project research design provides for two types of evaluation, formative and summative. Curriculum and script writers require a method for determining the effectiveness of their lessons in meeting the intended curriculum objectives. A trained team of observers will visit classrooms during the broadcasts to note the reactions of pupils and report to the

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designers on various aspects of the lesson. Each lesson will be observed by a minimum of two observers. Observers will be alerted by the writers to comment on particular aspects of each lesson. Weekly tests will be used to determine whether the objectives of the lessons have been achieved.

Evaluation

For the summative evaluation, the important question which the RLAP must answer is: Can children learn to read and understand English from radio instruction? If they can, then the next question is: Do they learn more from radio instruction than from conventional classroom instruction? A carefully planned summative evaluation will be designed to compare achievement of pupils taught by regular methods. For pilot testing, schools have been randomly selected within seven linguistic target areas of Kenya. Classes from the preceding year in the same school will serve as control groups. Measuring instruments will be carefully constructed using a large sampling of items selected at random from the curriculum. Care will be taken to insure that results will not be influenced by intuitive judgments.[5]

Conclusion

Language instruction by radio offers unique challenges and advantages. If successful, the RLAP will provide improved instruction of English at a lowered cost to a greater number of students, particularly in rural areas. The design of the program will allow for its transfer to other geographical locations, intact or with alterations, to meet local needs. For many emerging nations presently committing large percentages of resources toward basic education, the results of the Radio Language Arts Project may answer their critical need for cost-effective language education for primary school children. ■

Morris Cutler is a language arts specialist with the Kenya Radio Language Arts Program. Previously he worked in language arts curriculum development in Afghanistan.

Notes

1. Funded by the Office of Education, Bureau for Science and Technology, United States Agency for International Development. Implemented by the Academy for Educational Development, Washington, D.C., and the Kenya Institute of Education, Nairobi, Kenya.
2. Friend, Jamesine; Searle, Barbara; and Suppes, Patrick. *Radio Mathematics in Nicaragua.* Stanford: Institute for Mathematical Studies in the Social Sciences, Stanford University, 1980.
3. Kenya Institute of Education, "Statement of Objectives, Primary Education Project." Nairobi: Kenya Institute of Education, 1980.
4. Imhoof, Maurice. "Reading by Radio: A Position Paper on the Use of Radio in Teaching Skills for Educational Development." Washington: Academy for Educational Development, 1981.
5. For further information about this project, write Maurice Imhoof, Project Director, Academy for Educational Development, 1414 22nd Street, NW, Washington, DC 20037, USA.

Development Support Project in Egypt

by Mahmoud Agamia

The Development Support Communication (DSC) Project at Mariut started in 1976 as a cooperative venture between the Government of the Arab Republic of Egypt, the Government of the Federal Republic of Germany, and international agencies represented by the Food and Agriculture Organization of United Nations.

Development support communication makes modern and traditional communication methodology an integral part of development programs.

Development planners, whether they be economists, scientists, administrators or others, are too often divorced from the mass of society in their approach, language, outlook, and way of life. To bridge this gap, communication specialists must first consider each development proposal in terms of human feasibility. They must identify the motivation behind a project, the need for the project, and the objectives and purposes of the project. The specialists then seek to establish cultural and psychological avenues of communication, testing the degree of community receptivity to new ideas and change.

Project Links Planners, Villagers

Another crucial task for development support communication personnel is to determine a suitable communication strategy for a given development proposal. The critical flow-path for communication and the forms of communication to be adopted must link communication inputs with the progressive phases of a development program. This work includes helping to communicate relevant details of the development program within and between agencies involved. By establishing links between agencies as well as with the organized rural recipients, development support communicators encourage a dialogue between planners, subject matter specialists, disseminators, and idea adopters.

New Settlers Benefit

The main objective of the Development Support Communication (DSC) at Mariut is to improve the social and economic conditions of the settlers in the land reclamation areas southwest of Alexandria through continuous coordination of development activity, and support of those activities through suitable communication media. The project also ensures the training of Egyptian DSC personnel, extension staff, and selected key farmers in media didactics and technology, evaluation methods, and information management. The Mariut center includes three expatriate advisors and an Egyptian staff numbering 35 people.

With major activities concentrated at El-Nahda and Mariut, the project has established 50 village groups based at local cooperatives. Here farmers not only listen to rural radio programs, but receive printed materials and other aids, and regularly get special attention from agricultural extensionists and other field personnel. Strategies of approach are decided, and the rural communication materials designed, tested, and produced. Closed-circuit TV, posters, booklets, leaflets, and hand-outs, may be involved in the process. Reactions of farmers to the materials are regularly assessed for evaluation and feedback.

Farmers Trained in Communications

Extension activities are, in fact, an example of nonformal education where media, if properly used by the field staff, can play a positive role. Intensive training aimed at improving communication skills and educational abilities of extension personnel and selected farmers is one of the most important activities in development support communication.

In the meantime, development activities involving women, youth, and the community itself are subject to increasing attention by the DSC Project at Mariut.

Activities of the Development Support Communication Project at Mariut were evaluated by the Ministry of Agriculture, who decided to integrate the project as a permanent section of the Department of Agricultural Extension. Provisions for establishment of a DSC unit at Sinai have been included in current financial plans. It is foreseen that the existing DSC Project will assist the unit with advisory and on-the-job training of new personnel at Mariut. Similar DSC units will be established in other regions at a later date. ■

For more information contact: Mahmoud Agamia, Director, DSC Centre, Ministry of Agriculture, P.O. Box 364, Alexandria, Arab Republic of Egypt.

Note: *Distance Teaching for the Third World,* reviewed in *DCR* 36, is available for US $17.50 from Routledge and Kegan Paul, Ltd., Ayer Building, Lawrence, Mass 01843, USA; or from Routledge & Kegan Paul Ltd., 30 Store St., London WCIE 7DD, England.

Meeting the Basic Needs of the Rural Poor: The Integrated Community-Based Approach, reviewed in the same issue, is available for US $49.50 from Pergamon Press, Inc., Maxwell House, Fairview Park, Elmsford, New York 10523, USA.

(continued from page 16)

12. Where the communicator's function is recognized and measures are taken to strengthen his or her professionalism, the growth of communication systems that are relevant, vibrant and effective, will be encouraged, not only in the exciting and exacting tasks of nation building but also in more leisurely pursuits which are part of the fullness of life. This might seem a difficult objective, but it is an objective worth pursuing.

14. Communication and media in developing countries, no less than other areas of activity, require urgent attention of a special kind. In many Commonwealth developing countries, the role of communication has to be defined and established. In many, new technologies need to be introduced without unduly straining human and material resources. In most, the manpower base of communication facilities has to be greatly strengthened. Above all, communication and the media need to grow in such a way that they are appropriate to the social and cultural patterns of each country.

* * * *

Mass Media: 2.1 The mass media present developing countries with great opportunities—and great challenges. Society can benefit from the potentially extensive reach of the media, not only in the process of development but also in various other aspects of life. There must be time for joy in society, no less than for effort, and the media can bring enjoyment into homes quickly and easily. They can serve society in a number of ways, from disseminating news of farm prices through announcing weather warnings to exciting the human mind with words, songs and music. Their role as entertainers must not be disregarded. Unless people are helped to listen to or read things they enjoy they will not discover the important information they should acquire. It is a matter of concern in many developing countries that too many people who could afford to buy newspapers do not, or listen to a foreign station instead of their own.

2.2 The media, like any other institution in society, do not develop or exist in a vacuum. They are a part of society, and must reflect that society and be responsive to its needs and goals, if they are to be relevant and durable. Excessive dependence on foreign material, whether by way of reading matter or broadcast programmes, can be culturally disruptive. While, therefore, the media in different parts of the Commonwealth can sustain each other, their characteristics will inevitably vary from country to country.

2.3 The mass media in many developing countries, based primarily on colonial experience, are too heavily urban-oriented, and do not meet the needs of their rural populations.

2.9 By definition, the print media reach only the literate groups, and these tend to be largely urban elites whose position in society can be reinforced by the additional information they receive. This situation is accentuated by the fact that English, the common language of multilingual societies in the Commonwealth, which is also the language in which most foreign information is available, is itself limited to the most influential sector of the literate population.

2.10 The literacy problem is compounded in many Commonwealth countries by the existence of several language groups, each of which requires specific attention. Despite these difficulties, the newspapers and other components of the print media have an important role in promoting literacy. This can be advanced if they are adapted to the needs of the bulk of their reading audience and adopt a style and format designed to promote reading interests.

2.11 The small-readership press is of special significance in the Commonwealth, where many countries have small populations, or several linguistic groups. Large, city-based newspapers face problems of distribution in countries which are sprawling, have difficult terrain, or have limited transport services. In some instances, city-based newspapers do not serve adequately the needs—economic, social, cultural—of small rural communities, or particular linguistic groups. The growth of local newspapers, produced with simple and inexpensive technology, could help to fill these gaps.

* * * *

Human Resources: 5.1 Communicators are called upon to carry out a wide range of tasks, each requiring special expertise. In the media and in public information services, for instance, practitioners must not only be adept in the techniques of their craft; they must also have a substantial background of knowledge in several areas. It follows, therefore, that building up a corps of appropriately qualified people is a priority for all components of a national communication system.

5.2 This is a pressing problem in the development of communications in most countries of the Commonwealth where practical communication training is limited, or where many recruits entering the communication media have not had the benefit of a broad education. The proper development of all communication media requires a more consistent and comprehensive pattern of training than has so far been possible.

5.3 Training for communicators has to take into account a variety of factors including different forms of communication, the general level of education in a country, the need for training in different aspects of communication, and the fact that for training to be effective it must be a continuing process.

5.4 Non-formal communicators (agricultural extension or family planning workers, for instance) should be selected for their ability to empathize with the public, and be trained to communicate specialized information simply and effectively.

5.5 Media personnel have to learn their craft at a time when the nature of the c[illegible] itself is changing rapidly. New technologies have made many established training manuals obsolete. The process of training has therefore to be continuously reassessed and, where necessary, revamped. In this context, 'training for trainers' becomes as important as 'training for trainees.'

5.6 Media personnel have also to acquire a broad background of relevant knowledge if their assessments are to be valid and their approach to issues knowledgeable. Their special role in the development process requires that they bring a variety of journalistic skills to bear on complex national and international questions. ■

1983: World Communications Year

After four years of discussion within the United Nations system, the UN General Assembly has finally decided that 1983 will be World Communications Year. The purpose of the year is the "development of communications infrastructures," particularly "to increase the scope and effectiveness of communications as a force for economic a[illegible] social development." The year's activi[illegible] will focus on national communications policies and activities. The expressed aim is "to seek ways to use the tremendous achievements in communications technology to promote the harmonious development—economic, social, cultural—of mankind as a whole."

The declaration of a World Communications Year has long been sought by several organizations, but there were problems over which UN agency should take the lead: the ITU or Unesco? This question was linked to the matter of financing. The coordination of an international year, let alone national activities, requires fairly substantial sums. Who should pay?

The General Assembly decision confirms that the ITU is to be the lead agency, and that the year is to be financed by voluntary contributions. The search for funds will be enormously helped by the timing of the fourth World Telecommunications Exhibition (Telcom 83) to be held in October/November 1983 in Geneva.

The ITU hopes that national coordination committees will be set up in many countries. For more information, write the WCY [illegible] Secretariat, Places des Nations, CH-1[illegible] Genève, Switzerland. ■

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International Dateline—New Resource for Broadcasters in the Developing World

by Mark Magnier

The idea for a newsletter tailored specifically to the needs of broadcasters in developing nations and concerned with population-related topics was born in 1978 in Mauritius. At that time, the director of the Population Institute's Communication Center was attending the 12th Biennial General Conference of the Commonweath Broadcasting Association. Of the 33 nations represented at the Conference, David O. Poindexter was able to survey 25 of them to find out what sort of information they were receiving on population and family planning. Fourteen replied that they were receiving no information on population from beyond their borders, and more than eight nations reported receiving no information from any source. A common thread running through the majority of the responses was that the broadcasting organizations were understaffed and overextended. What material they were receiving was general in nature and not tailored to the specific needs of broadcasters. Consequently, little of the information was getting onto the air. It was decided that an attempt should be made to remedy that situation.

International Dateline — News of World Population and Development — A Service for Mass Media published its first issue in July 1980 to fill this vacuum. Now, a little over a year and a half later, the newsletter is sent to 75 countries around the world, and is presently issued in English and Spanish language editions with hopes for a French edition in the future. Issued monthly, *International Dateline* is sent free-of-charge to broadcasters and mass media professionals in developing nations, thanks to partial funding by the United Nations Fund for Population Activities (UNFPA). A $6/year subscription fee, which helps defer printing and mailing costs, is charged to others who wish to receive the publication. The newsletter has grown steadily, and in January 1982 the first series of regional inserts (one for Africa, one for Asia, and one for Latin America) appeared, highlighting news of population and development in those regions. These inserts were developed in response to readers' requests for more information about their particular areas. The newsletter has received wide-ranging and enthusiastic support from its readers, whose material and suggestions are incorporated into the newsletter wherever possible. Scores of letters from recipients support that they are using the newsletter's material, and subscribers often attest to that fact by sending their own videotapes, radio and television scripts, and articles.

Designed to help the often-understaffed news operations in developing nations, the newsletter's material can be lifted verbatim from its pages, and read directly over the air if necessary. *International Dateline* is not under copyright, and readers are encouraged to use its items in written copy as well as for broadcasts. It would be a truly mammoth task to try to reach people around the world directly with features and hard news about population and development, but by making use of existing communication networks, and by providing communicators with interesting and useful material, The Population Institute hopes to make effective use of available resources.

Some of the areas that have been covered in recent issues include refugees in the Horn of Africa, the state of the world's children, the population situation in India and China, and the world firewood crisis.

Although television has come a long way recently in many developing nations, it is radio that enjoys the largest audience, cuts across the literacy barrier, and is within the reach of even the poorest people. Thus, *International Dateline* is primarily a source for radio communicators.

In addition to publishing the newsletter, the Communication Center of the Population Institute exists to provide additional material or information needed for stories, broadcasts, or workshops concerning population and population-related topics. The Center illustrates how population growth relates to many facets of life in developing countries. This is a free service, thanks again to UNFPA. If the Center can not provide the information, it will try to put the request in the hands of someone who can.

If you would like more information about the newsletter or the activities of the Population Institute, if you are a mass media programmer and would like to be put on the mailing list for *International Dateline,* or if you are not from a developing country but would like to subscribe for $6/year, please contact Mark Magnier, The Population Institute-Communication Center, 777 United Nations Plaza, New York, NY 10017, USA. ■

Mark Magnier is News and Information Director at the Population Institute's Communication Center and is the editor of *International Dateline.*

The following items, reprinted from International Dateline, *are examples of the population news supplied to subscribers. These particular items also illustrate various uses of development communication for population and family planning.*

MASS MEDIA IN HONG KONG. In a letter to the Population Institute here in New York, Mrs. Eleanor Cheng, Officer-in-Charge of The Family Planning Association in Hong Kong, outlines the important role mass media has played to promote family planning since the early 70s. It's a good example of what *can* be accomplished.

"Hong Kong has two radio corporations, one run by the government and the other commercially owned. There are now five Chinese channels and four English channels. They regularly broadcast our family planning jingles and messages introducing our services," Mrs. Cheng says.

"From 1973 through 1980, there were also four joint ventures with radio, each taking the form of a series of 20 to 26 sessions, or broadcasts. The programs included talks on family planning, family life education, *phone-in sessions,* and *prizes for callers* giving the correct answers to (family planning) questions.

"*The intensive use of radio* started since findings of a survey in 1970 revealed that *radio was the best medium for reaching the rural population.* One radio series was, in fact, designed especially for the fisherfolks who are well-known to have large families.

"Television, however, has become more and more popular (and common) toward the mid-70s. We have produced 30-second motivational films on various themes and services which are telecast regularly on all the TV channels in Hong Kong. They are broadcast free of charge."

Mrs. Cheng cites many television series over the past ten years varying in format from interviews, to slide shows, dramatic plays and youth-oriented discussions. But the Association's mass media efforts are not relegated only to TV and radio. Other promotions include parades, mobile broadcasts, outdoor drama, and poster advertising in high traffic areas such as mass transit stations, taxis, ferry piers, pedestrian bridges, buses and even outside walls of buildings.

Figures show that mass media efforts in Hong Kong are working.

* * *

THE COMMONWEALTH BROADCASTING Association has also done some interesting and effective work in the area of radio and the population problem. It reports that to a great degree, the success of Singapore's family planning program has been due to the radio's role in promoting awareness of the need for family planning, and in motivating its listeners to accept such planning as a way of life. Singapore offered good radio *programs* and sold transistor *receivers* at prices well within the reach of the ordinary citizen. While Singapore enjoys a high literacy level, radio has been cited as a valuable arm in helping solve an extremely urgent problem. *International Dateline* July 1981

"Communication, Society and Development: A Report of a Commonwealth Committee on Communication and the Media"...

DCR is pleased to present here some excerpts from this thoughtful and incisive report published in 1980. As Shridath S. Ramphal, the Commonwealth Secretary-General, explains in his foreword, ". . . The Report begins with a sensitive analysis of the state of the media in the Commonwealth and then proceeds to make several practical recommendations. It can be read against the background of our times and the growing requirement of developing countries that the flow of news should be more reflective of the personality and priorities from which it comes. The Report's conclusions are geared to helping secure recognition of the role that communication and the media can play in assisting society by strengthening participatory democracy and helping to attain national goals. . . ."

The nine-member Commonwealth panel which drafted the report was chaired by Ernest Corea, now the Sri Lankan Ambassador to the United States.

The report, which includes sections on Communication Policy, Mass Media (Press, Radio, and Television), Public Information Services, News Agencies, and Human Resources, concludes with a list of recommendations. Throughout, it contains many insightful observations on the nature of development communications.

The Report may be obtained free of charge from the Information Division, Commonwealth Secretariat, Marlboro House, Pall Mall, London SW1, England.

Overview: 1. Communication is so much a part of our lives that its significance as an aspect of human effort and progress is often either taken for granted or simply ignored. The 'communication component' of development projects is frequently tagged on to a budget as an afterthought, if it is included at all. Interpersonal communicators, be they barefoot midwives or agricultural extension workers, are generally given a low rating on a nation's social scale. Public information officers are shrugged off as doing less substantive work than their colleagues in government. Mass communicators become the subject of great concern only when their activities are believed to be 'creating' violence or dissonance in society.

3. This, indeed, is the true role of the communicator: to serve as the focal point of 'messages' imparting information and ideas; and to ensure that an interchange of information and ideas takes place. The interpersonal communicator has a shorter, narrower reach; the mass communicator a longer, wider one. Both groups perform similar functions, though in different ways. Without their active and sustained involvement, an important component of the development process is lost to societies moving towards the goals of self-improvement and self-fulfillment.

4. Communication is a dynamic process which is more effective if it is participatory. In any society, the communicator who considers his audience or readership as a passive group, or as a target to be hit, is performing only a part of his or her function. Eliciting reactions to what has been said and written, and providing the means for such reactions to be made known, are also an essential part of communication. Participatory communication provides people with an opportunity to be directly associated with policy formulation and implementation, giving them a sense of commitment to national issues. For this reason, the concept of participation is crucial to the communication process.

5. How many mistakes in social and economic development could have been avoided with better communication between the planners and the people? Resettlement projects that lie withered and empty . . . public health clinics whose medication is untouched in village huts . . . semi-mechanised ploughs in disuse because of faulty maintenance . . . family planning kits in garbage heaps . . . benignly motivated land reform which nevertheless evokes peasant anger . . . these are all among the experiences of the development process. Both developed and developing societies make mistakes. How many mistakes can post-colonial societies, working against many disadvantages including time, afford?

6. The richness of a people's experience; the value of established wisdom; the virtue of commonsense; workaday reactions to theoretical formulation: all this and more must go into the national meld if development plans and projects are to inspire and excite. None of this may occur, unless effective communication facilitates it.

11. The argument that communicators in developing countries are unequal to this task only helps to perpetuate a vicious circle. Communicators will forever remain relatively untrained or unskilled, and therefore regarded as incapable of fulfilling their proper function, until their role in society is firmly established and resources for enhancing their skills are provided. In the same spirit, communicators require a certain latitude within which to function. Skilled professionals deprived of 'elbow room' remain in place as malcontents or opt out.

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Development Communication Report

Clearinghouse on Development Communication

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The Power of Words: An Interview with Andreas Fuglesang

A previous contributor to DCR, *Andreas Fuglesang is an internationally recognized communications consultant, currently the Deputy Director of the United Nations Center for Human Settlements/Habitat, and head of its Information, Audio-Visual, and Documentation Division. He is particularly interested in cross-cultural communication and adult education in the Third World. His new book,* About Understanding, *represents a major contribution to the analysis of communication at the grass roots level. (The book will be reviewed in a future issue of* DCR.*) Andreas Fuglesang was interviewed by Judy Brace, the Assistant Director of the Clearinghouse, during her recent trip to Kenya.*

DCR: It has been six years since the UN Conference on Human Settlements in 1976. What do you see as the results of that conference?

AF: Vision Habitat was a feature of the Vancouver conference on the man-made environment. We have expanded our functions, and are now the United Nations Center for Human Settlements/Habitat. The Canadians, who hosted the conference, suggested that a collection of visual records be made for presentation at the conference. I oversaw the production of 240 films within a period of just 14 months! Then we translated them into six languages and made prints. So after the conference we were left with some 10,000 units that needed storage and handling, and the Canadian government provided funds to do this at the University of British Columbia, Vancouver. Since then we have set up eight centers around the world to serve as film libraries and information centers on human settlements.

DCR: Are these regional Habitat centers viable, and are the films well used?

AF: Absolutely! We were very careful in the selection of collaborators, choosing academic institutions or radio and TV centers to distribute our films. Our selective distribution policy succeeded because we have loan arrangements now, for example, with most of the major institutions that train Third World students. We loan as many as 20 films a month to institutions like the University College of London, London Polytechnics, etc. Here in Nairobi, which is a United Nations Center, we have become an interregional distribution center, and we take advantage of traveling UN staff to carry our films to requesting institutions. In the U.S. we have just reached an agreement with the University of Illinois to be our U.S. distributor for the university market.

DCR: Are the films making money?

AF: In French-speaking Canada, we use one commercial film distributor and in the English-speaking part another. That makes money for us. We sell a lot of film prints and get royalties. For example, the University of Bogota in Colombia has bought 200 prints of our films.

DCR: Do you read *Development Communication Report?* Do you recommend it to others? What would you like to see in it?

AF: Sure it's read. I read it. It's an important reference. It's quite dry, in the reference way—academic. It has established itself as the main information source in the field. It should use more communication techniques, more graphics, be more lively, have more case studies. In other words more money should be spent on it.

(continued on next page)

Clearinghouse to be Part of DEVELOP Data Base

In *DCR* #36, readers learned of a new data base, available to them at present through Denver Research Institute, whose purpose is to provide information suited to the needs of developing countries.

Over the course of the next year, with a grant from Control Data Corporation, the Clearinghouse will join ten other institutions as a contributor to the building of the DEVELOP data base. In the field of development communication, we will be providing project information, institutional resources, and abstracts of materials from our own publications as well as from our extensive collection of fugitive (unpublished) documents. One thousand entries are scheduled to be added to DEVELOP, and will become available to our readership through our information service.

Readers who would like to make their own communications projects, publications, or institutions accessible to a wider audience may wish to write us about possible inclusion in the data base. ■

In this issue . . .

A publication of the Clearinghouse on Development Communication
Supported by the Bureau for Science and Technology of the U.S. Agency for International Development

(continued from page 1)

DCR: In your article, "Beans in a Bowl" (*DCR* 27 & 28), you argued eloquently against the use of the word "illiterate." Is there another that you would prefer?

AF: People are not ignorant. That is a great myth. They may be uneducated in the Western sense, but they are not ignorant. People are educated in their own way. The traditional society has its own elaborate educational institutions.

DCR: Is development communication a viable idea within the UN?

AF: No. Development communication has failed in the United Nations because it is not yet sufficiently planned for in projects or included in project budgets.

DCR: Would you describe your background, and how you became interested in communication and development?

AF: I came from advertising. I started out as a writer in an agency in Olso, with a degree in marketing and psychology. I worked with government information services and became involved in nutrition education for institutions. I was offered a job by the Norwegian government agency to work with the Zambian National Food and Nutrition Commission which was connected to the President's office. We used radio, TV, and newspaper advertisements, and developed teaching aids and curriculum materials via a very comprehensive national nutrition education campaign. Our teaching kits were used in secondary and nursing schools, and in 1,000 clinics for children under age five. No one had developed those kind of teaching aids in Zambia before. Our print advertising carried mail-back coupons so that people could request more information, and the early response was overwhelming: 10,000 letters a year on many subjects of concern. Our mere presence made us useful. I was there for four years, and then went to Ethiopia for SIDA, the Swedish International Development Agency, to do the same kind of work. But then the revolution came, and famine developed in Welo province which was an incredible situation. We were responsible for the distribution and nutritional content of food to the refugee camps and for nutrition education.

DCR: How does this background of African experience shape your perception of communication?

AF: What grew out of all this was my realization that Western society, which is based on conflict solution through confrontation, gives a distorted view of the world. Tribal societies have a system of egalitarian consensus which is reached through days of discussion after which no member of that society will break its consensus. We Westerners have something to learn which is undervalued: a system of conflict-minimizing measures, a way to deal with the problem of aggression in the community. Honor, politeness, and sharing are major traditional values.

The oral tradition is the basis for traditional societies. I was in a Masai village recently talking with a village elder when a young girl came up and bent down to receive the elder's blessing. He said his blessing, touching her head, and she went away radiant. To be blessed is wonderful. And to be cursed is a catastrophe. It's the power of words, words used very discriminately. People sitting three days talking are not lazy, they are producing social relations. We prefer to produce consumer goods.

DCR: Isn't advertising based on a magical belief in words?

AF: Mass media does not *change* behavior by itself, it only can *help* to change it. Lazarsfeld's notion that to change behavior you must reach the focal persons of a society—the opinion leaders—is not sound for it only strengthens the social elite, those with better living standards. True communication, on the other hand, is shared interests. In traditional societies there are no individuals, only community members with shared interest. The individual is a contemporary Western cultural invention in the same way as childhood is a Western cultural invention. Notable historians have found out that 200 years ago children in Europe had no childhood. Children were only "small adults." We are stuck in the concepts of our own culture.

DCR: How do you see communication changing as the world populations move dramatically within and between continents?

AF: Masses of human experience in the traditional societies are not recorded and much is being lost. Information about survival, for example, about living in balance with one's ecology, about social relations and human interaction. The North-South dialogue is above all a gigantic cross-cultural communication process in which psychological sensitivity and understanding between peoples is of fatal importance, more so than any clever application of media technology. ■

Farmers in AV Program Diversifying Crops

by Milt Shaw

An innovative audiovisual program in Paraguay is using videotapes and a mobile playback system to reach small farmers in isolated villages with agricultural information.

The CREDICOOP audiovisual project is a sub-project of the AID-funded *Minifundia* (small landholders) Crop Intensification Project which began in Paraguay in 1979. AID involvement in the project is a logical continuation of the technical and financial assistance the organization provided in the formation and development of CREDICOOP in 1973.

The goal of the five-year *Minifundia* Project is to create a system for the production, processing, and marketing of fruits and vegetables by approximately 500 small farm families in the central area of Eastern Paraguay. CREDICOOP, a central organization of 32 agricultural cooperatives with approximately 21,000 members, is providing technical assistance and credit to help the farmers diversify crop production and improve their economic well-being.

Of the small farm families (six to seven persons), 20 percent own three hectares, while more than 40 percent own less than a hectare. In the past, farmers have planted such traditional crops as cotton, tobacco, corn, and some grains on their land, but the Project is attempting to vary this practice. It will do so by introducing the cultivation of pineapples, strawberries, bananas, and tomatoes, as well as by teaching improved crop rotation systems or crop combinations most economically beneficial for small farmers. The project anticipates substantial gains in farm income.

CREDICOOP is receiving technical assistance in developing the technological production packages from an interdisciplinary team composed of technicians from the Ministry of Agriculture Extension Service (SEAG), the National Agronomic Institute (IAN), and CREDICOOP, as well as from Multinational Agribusiness Systems, Inc. (MASI). MASI was selected by bid from small business organizations in the U.S. on the basis of its technical proposal and budget. MASI provides technicians skilled in the areas of production, packing, and marketing.

It was determined that a video system would be effective in helping to introduce the new cultivation practices and the technology required to grow the proposed crops. As a result, CREDICOOP's Education Department established an audiovisual (AV) section with Project funds. Four members of the AV section, including a Peace Corps volunteer, received two months of technical training con-

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Video Enhances the Effectiveness of Management Trainers in Ghana

by Daniel B. Prince

Portable video equipment was a recent addition to a $5 million management training project now in its fifth year in the West African country of Ghana. In less than a year it has proved to be a useful asset to the activities undertaken by the Ghanaian professional staff and their American advisors, enhancing both their credibility and effectiveness.

Project Background

The Economic and Rural Development Management (ERDM) Project was initiated in Ghana in 1977, under the joint sponsorship of the U.S. Agency for International Development (USAID) and the Government of Ghana. It supports Ghana's thrust to decentralize decision-making by providing management training to district (i.e., "county") department heads and locally elected councillors. To date, over 2,000 officials have participated in training.* As a result, districts report such changes as improved local revenue collections, better project planning and implementation, more productive council meetings, and improved cooperation among departments.

The Introduction of Video

In early 1981 four complete sets of Sony ¾" videocassette equipment (see hardware list) were received in Ghana. While a number of communication aids, including 16mm film projectors, overhead projectors, and combination backboard/flip chart easels, had been furnished much earlier in the Project's life, by 1981 only the easels were getting much use in the field. Staff members had tired of carrying their film projector and overhead projector with them. In many parts of Ghana there is no electricity or the supply is erratic. The country's economy has been declining for over a decade, so getting spare parts or repair services has been an increasing problem, further limiting the usefulness of even basic equipment.

An Effective Tool

Against these odds, the prospects for the utilization of the new videotape equipment were dim. However, with the stimulation and guidance of several of the American advisors and a genuine interest on the part of some of the Ghanaian Trainer/Consultants, the equipment *has* been put to use and, in the process, has become an effective tool.

* All seminars are conducted in English, the official language of Ghana. Likewise, handouts produced on the project's mimeograph machines are also done in English.

The Uses of Video

Video has enhanced the credibility and effectiveness of the Ghanaian Trainer/Consultants by:

1. Stimulating Involvement: The presence of television equipment, even simple black-and-white portable equipment like that used on the ERDM Project, stimulates curiosity, interest, and greater participation in ERDM events. For example, one of the ERDM teams was invited to present a briefing on its recent activities to the regional minister, the chief official in the region, (or "state.") Team members suggested videotaping the briefing and subsequent discussion. The minister agreed, and, to the surprise of the trainers, as other officials in the building heard that television equipment was being set up, they came in to join the briefing. Perhaps their motivation was "to be on TV," but the effect was that the team succeeded in gathering in one room most of the region's top officials for a very lively relevant discussion!

2. Documenting Action and Activities: Staff members have attempted to document visually the progress on local development projects. This is done by making a short tape soon after the initiation of a project, showing, for example, the first stages of school construction, then returning later to make a follow-up tape (or tapes). Trainers have also videotaped portions of their management seminars in order to have a record of what went on, particularly the comments and questions of participants.

3. Disseminating Policies and Procedures: An illustration is an interview conducted with a national official whose agency allocates grants for local development projects. Since the policies and procedures of this relatively new agency are not well known, the use of this tape conveys information in a concise, consistent, and cost-effective manner.

4. Stimulating Awareness, Discussion, and Action: One regional team was interested in the success of a small-scale block-making enterprise organized by a particular district council. Operating at a profit, it was providing much-needed funds for community development projects. ERDM staff took their battery-powered video recorder and camera to the outdoor worksite and made a 20-minute tape about the process and its results.

Subsequently this tape was shown at several national meetings of local government leaders and in a number of other districts. In at least two cases, similar projects have now been undertaken. Prior to the tape, Trainer/Consultants had tried to explain the block-making project and stimulate its replication. They found, however, that the tape was a much more powerful catalyst. They have seen their credibility as a source of ideas and expertise increase by being able to show the tape and then follow it up with detailed discussion.

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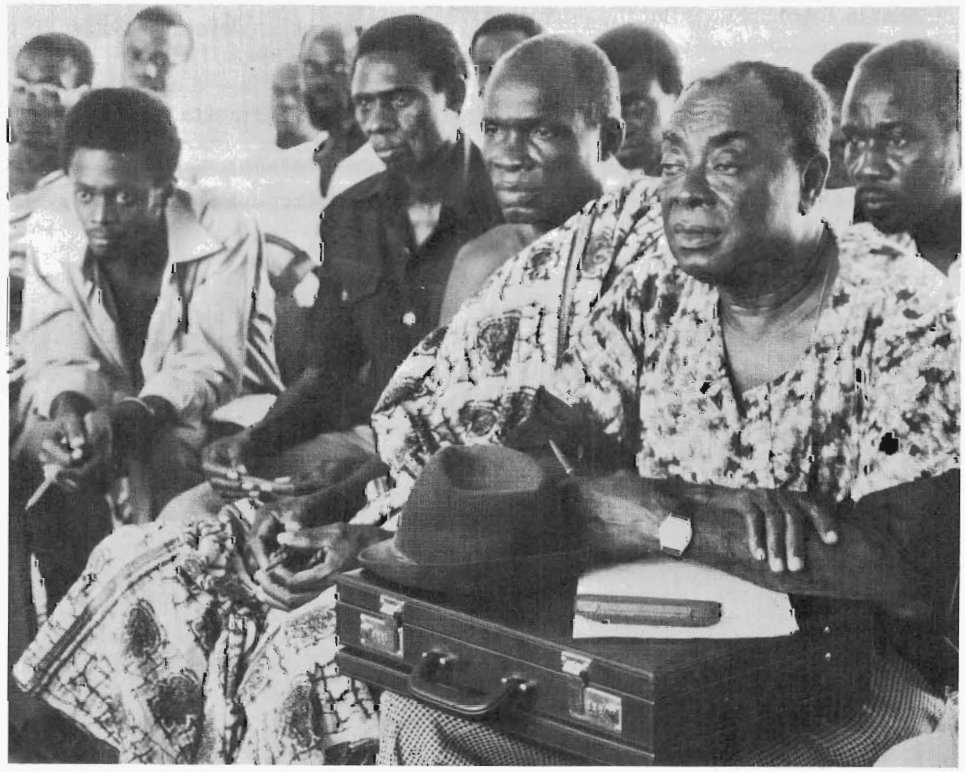

Viewing videotapes made by project staff helps government officials like these see what is going on in other districts in Ghana.

Experiencing the Green Revolution:

Simulation Leads to New Perspectives

by Graham P. Chapman

Since the advent of the Green Revolution the small farmers of the developing countries should have benefited considerably from the application of the fruits of modern science. But the results have been patchy—quite often the technology has induced social and economic changes detrimental to the small and poor farmers. Sometimes social tensions have arisen which have proved a major hindrance to breakthroughs in the production and distribution of food. In the inquests which have followed unsuccessful extension projects, quite often one simple factor emerges—that the managers of these projects do not adequately appreciate the problems from the small farmers' perspectives. Is it possible to give the managers the experience of being a small farmer? More generally, is it possible to give this experience to the professionals and students of the First World who may directly or indirectly influence the way new technology is presented to the target group of farmers?

The answer is a simple yes—by using a simulation game known as the Green Revolution Game, which has been developed to the extent where it has a powerful and lasting effect on the sensitivity and understanding of participating players.

Who Can Learn from this Simulation?

The game originated from field work undertaken in Bihar, India, and is therefore rooted in a real context. But the situation it portrays has proved to be relevant to many other contexts in many other countries. It was devised initially for the purpose of demonstrating to university students the complexities of the decision-making process of small farmers, but it has now been used extensively throughout the world with great success with several identifiable groups. These include:

1. Specialists who need to put their own particular expertise in a broader social and economic context;
2. Students of development studies who need to experience the problems of small farmers so that they can read the literature critically;
3. Professionals and volunteers who are going to work in development projects, to enhance understanding of small farmers and the constraints under which they operate, and to expose the participants' own value systems and preconceptions;
4. Managers of development projects, to demonstrate the effects of macro-scale policy at the level of the individual farmers;
5. Policy-makers who wish to generate research hypotheses and undertake sensitivity analyses of policy implementation;
6. Extension agent training managers, and extension agents themselves.

The Green Revolution Game

The game is played with between 12 and 24 participants, arranged in pairs, each pair managing one farm in the 'village'. A game Manager runs the game, and effectively remains outside it, working with packs of cards (or optionally a microcomputer) to generate the environmental circumstances the participants face. A Banker, on the other hand, is very much a key figure in the game, and his relations with the farmers and his credit policies can have a significant effect on what happens.

Each pair manages one family and its farm. Family and farm sizes are dealt out randomly at the beginning of the game, and are not necessarily in balance, so that farm sizes vary and so do the man-land ratios.

The farmers go through annual cycles of growing crops of rice which they use to feed their families, and, if a surplus is generated, to sell to provide income for investment. Farmers can invest in technical innovations to increase yields (fertilizer and high-yielding seed varieties) or to counteract negative effects of the environment (wells to protect against drought and pesticides to combat pests). They may have to hire in labor, or more likely seek employment on other farms for their surplus labor. The technological investments are all risky—their success contingent on many circumstances.

The farmers are responsible for feeding their families, and if in any year they have a food deficit, they try to cover this by any possible means—including begging, borrowing, and stealing, or death will strike some member of the family.

The price of rice fluctuates according to the amount of rice sold each year, and according to inflationary factors. The prices of inputs are also inflating—and inputs may be subject to further random shocks which restrict their availability.

This core structure contains the motivation for the strong social interaction that usually develops. Relationships of debt, patronage, outright exploitation, and benign cooperation may emerge. A key point here is that there are no rules governing the village—the game is played with model people and model acres of land and tokens for rice and fertilizer. So the constraints on the village are the actual amounts of physical resources, which will be used and shared as a result of the economy and society that develops.

The experience of playing is provocative and highly memorable. It is usually enjoyable, but beneath the enjoyment it may also prove to be a bitter and moving experience. Participants have broken down weeping under the pressures of trying to sustain their family, and very real revolutions have occurred, with land grabs by organized landless labor. Participants realize how short-term survival may dominate long-term strategy, how each individual may see very differently his own interests which may conflict with those of the group (in man-land ratios and birth rates for example). They learn that their explanations for their own behavior may be very different from those they have previously thought of, and they learn how very partial and limited is their understanding of what was going on in their own village.

At the end of the game there is a long debriefing period during which participants discuss the broader significance and implications of what happened. This debriefing may continue spontaneously for days afterwards. On many issues participants may never agree on the relative importance of certain factors.

I am often asked what I expect participants to learn. My answer can only be to unlearn everything they knew before. And if they play it a second time, to unlearn everything they learnt the first time. The answers to what happened in the village are always contingent. One man may be ruined because in his haste to get a loan from the bank he does not understand the repayment conditions. Another may succeed because he pledges labor to a large farmer who in return underwrites a loan. A large farmer may become a popular source of credit because he is easily accessible, and he may prevent a potential revolution by wise use of his patronage. A farmer may succeed with new varieties without protection because he is lucky, another may fail because he is extremely unlucky despite taking all precautions. A cooperative may succeed because capital is matched to investment opportunity, another may fail because at a critical moment food supplies are inadequate, and in addition a debt goes bad.

To be more specific, perhaps the lesson of most importance to extension agents is that the 'package' of inputs, credit, and risk-spreading has to be fashioned according to these contingent circumstances. Such lessons learnt by experience rather than instruction are hard to forget. ■

The Green Revolution Game is available from Marginal Context Ltd., 36 St Andrew's Road, Cambridge CB4 1DL, U.K., at a price of £195 plus delivery charges.

Graham P. Chapman has spent many years working in the developing world, particularly in Asia. He is currently University Lecturer in South Asian Geography at the University of Cambridge, Cambridge, England.

Microelectronics: Some Applications for Developing Countries

by Gary Garriott

The microelectronics revolution and its implications for developing countries is being increasingly studied and debated. Already it is difficult to keep track of proposed feasibility studies and international meetings convened to discuss the subject. The proliferation of studies grows out of the difficulties of defining the boundaries of either the applications or the technology of microelectronics. This is because microelectronics technology has had the effect of blurring the distinctions between previously disparate hardware categories. For example, microelectronics allows for marriage between affordable computers and existing telecommunication media, principally the telephone.

Already for users in industrialized countries, this union presents a maddening array of choices. It is not only that many new services are available (word processing, inventory control, financial management, conferencing systems, data base search, storage and retrieval, to mention a few), but also that one must decide whether to buy the necessary hardware and software to perform the job (to have an "intelligent" system) or whether to buy computer services available commercially through interconnection with telephone lines to "dumb" terminals. Combinations of both are also possible. The permutations are many and are one reason for the passionately held and opposing views that microelectronics will either prove to be a blessing or a curse to developing countries.

Global Efforts to Fight Poverty

Those who are optimistic about the positive effects of impacts on development efforts tend to point to futuristic uses of microelectronics technology. Jean-Jacques Servan-Schreiber in his book *The World Challenge* suggests a global effort that combines the financial resources of oil-exporting countries and the technological expertise of Japan and the U.S. to mount a microelectronics-led assault on world poverty. He proposes that poor villages be equipped with a computer terminal linked to regional or national networks, thus providing users with information needed for good health and improved agricultural production. Industrialized learning could also be provided cheaply, with literacy not even a requirement if electronic voice synthesis and understanding were mastered (laboratory prototypes have already been developed).

Indeed, the government of France has recently announced the establishment of a new World Center for Microcomputer Science and Human Resources headed by Servan-Schreiber. According to reports, a team of at least 100 of the world's top computer experts and social scientists will create a series of pilot computer-assisted education projects for use in developing countries. Scientist, futurist, and science fiction writer Arthur C. Clarke has predicted the emergence of "pocket professors" where educational program modules are "plugged in" as desired. This technology could have particular application in vocational training since correspondence courses are already popular in many isolated places around the world.

Computers Deliver Messages

Another area of considerable interest is the application of computers for conferencing and message delivery systems. These uses have the advantage of allowing participants to "enter" the computer and retrieve comments or messages on a particular topic at convenient times because the receiving party need not be "tuned in" when the message is sent. Such conference links can continue for weeks or even months, as the technique allows "conferees" to participate (sit down at their computers) whenever their schedules permit, without the need for person-to-person meetings.

Canada's International Development Research Center and the International Federation of Information Processing held a five-day workshop on this subject in Ottawa in October 1981. Recommendations included support of low-cost non-geostationary satellites, similar to the current series of satellites launched by U.S. and European amateur radio societies, that would allow regional and/or international conferencing via inexpensive microcomputers and transceivers on the ground and on-board satellite computers/transponders. Costs could well be low enough to allow several developing countries collectively or individually to develop such satellite systems.

New Conferences Planned

Perhaps the most immediate development application of microelectronics technology is in the management of text and information storage and retrieval for libraries and documentation centers. As the National Center of Scientific and Technological Information (COSTI) of Tel Aviv put it, "switching on the electronic library and using mini and microcomputers in the process is fast becoming a reality." COSTI is holding an International Conference on Mini and Microcomputer Applications in Information, Documentation, and Libraries scheduled for 1983, and is preparing an inventory of software packages written for information work under contract to Unesco.

This past January the International Documentation and Communication Center (IDOC) of Rome helped organize an International Meeting of Documentation Centers on Third World Issues in Lisbon. The basic issue for these and other meetings is how to provide a transition from manual systems that have become overburdened by the volume of information storage, processing, and retrieval, to computerized systems. The technological solution is not simple: on the one hand, minicomputers suitable for documentation centers are still too expensive, while microcomputers are too limited by memory capacity and available software. Present alternatives seem to lie in exploring a range of technological options including appropriate documentation technology, increased focus on training, and establishment of networks of information exchange on experiments leading to standardization of hardware and software.

Implicit in all of this is the larger question of political control of information with which the Intergovernmental Bureau of Informatics (IBI), also based in Rome, is concerned. IBI, for example, is developing an information system in Arabic through a cooperative agreement between France and Tunisia. The issue of control is sure to receive an extended hearing at a world conference on information strategies and policies to be held in Cuba in 1983.

Who Will Benefit?

The question of who ultimately benefits from informatics provides a point of departure for critics of the microelectronics revolution. In general, developing countries have little or no control over the information relayed by the subsidiaries of transnational corporations to the parent companies via computer networks. When this lack of national control is coupled with the fact that about 85 percent of the world supply of computers and computer data is in the hands of 10 Western companies, it is easy to appreciate the sensitivities of developing countries to the real possibility that "technology transfer" may in fact result in greater unwanted dependency for them (even Canada has 90 percent of its data processing performed beyond its borders). In addition, microelectronics combined with industrial production technologies may increase the world competitiveness of certain industries (for example, garment manufacturing) in the industrial countries while simultaneously removing the low labor cost comparative advantage of these same industries in the Third World. Kurt Hoffman and Howard Rush of the Science Policy Research Unit, University of Sussex, England, claim that developing countries trying to

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A Synergistic Example

Videotapes are an integral part of a new three-day workshop on "Improving Local Revenue Collections" organized recently by one of the Trainer/Consultants. To his audience of district officials he shows several short videotapes on how other districts are trying to increase their revenues. Participants are charged with developing a list of the district's most pressing problems in revenue collection—and with generating a list of actions to solve them. Once consensus is finally reached, the group makes its *own* videotape, highlighting the district's problems and recommendations.

The production and later use of this videotape *documents* the outcome of the workshop, *disseminates* information about this district, *stimulates* similar activity by other districts and officials, and in the process, *encourages greater involvement* in the initial workshop.

The Obstacles

The obstacles foreseen at the outset have proved real: some staff members show no more interest in lugging the video equipment around than they did their film projector. Electricity is required to use the TV monitor. Thus, while it has been possible to make tapes on battery power, it has been difficult to arrange showings for communities with no regular supply of electricity. The motor on one player has burned out, probably due to fluctuations in the line current. True to form, the repair parts have had to be ordered from the U.S. and, after four months, still have not arrived.

It also has been difficult to arrange some of the tapings. Local officials tend to view a request to make a tape as a major and formal task. Often this has meant that staff have had to travel to a site several times to meet with all the pertinent people, draw up an outline of the proposed tape, and get the consensus necessary to proceed. In some cases, taping has had to be rescheduled when not all of the invited officials turned up (and more often than not there have been five or ten people who want to appear on the tape rather than just one "spokesman.") In other cases, ERDM staff failed to appear on schedule, usually because obtaining sufficient gasoline has been a continuing problem for the project.

The Outcome

However, against these odds the staff have managed to produce some simple, "edit as you shoot" tapes *and* make good use of them. By appearing in the videotapes as interviewers and by operating all the equipment themselves, the Trainer/Consultants have enhanced their reputation as professionals. And because television seems to be a very credible medium, here as elsewhere in the world, it has improved the credibility and effectiveness of the individuals who bring it into the rural areas of Ghana.

Hardware used by the ERDM Project

Each equipment set consists of:

1 —portable ¾" videocassette recorder, which operates on either AC or battery power (20-minute cassettes maximum)

1 —black-and-white camera, with zoom lens and built-in microphone, which gets its power from the portable recorder

1 —12" black-and-white TV monitor, which operates on AC only

4 —microphones plus extension cables

— various connecting cables

— transformer, to convert Ghana's 220v AC into 110v AC needed by the equipment

1 —¾" videocassette player, which operates on AC only (60-minute cassette maximum)

Afterthought

If we were to do it over again:

1. We would consider using ½" Beta or VHS equipment instead of ¾". It's smaller, lighter, and cheaper. But it's *not* compatible with ¾" equipment, which our organization already owned (and yours may too).
2. *If* we stayed in ¾" format, we would buy a ¾" *recorder* instead of a *player*. Linked with the portable recorder, this would give us basic machine-to-machine editing and dubbing capability . . . at a small marginal cost.
3. We would eliminate the need for a transformer by buying equipment compatible with the local line voltage.

Recommendations to Other Video Users

If you are considering using video as a training aid in a setting similar to the one described, these recommendations may help you.

1. When you buy the equipment be sure to get sturdy, well-sealed (i.e., dust-proof, water-tight) carrying cases, the kind with foam rubber on the inside to cushion the equipment. Use heavy-duty padlocks to keep the cases locked.
2. If you are already overseas and must order the equipment from another country, have someone you trust check it all out *before* shipping it to you. This person should set it all up, and *use* it, before sending it to you. There is just no other way to insure that all parts and pieces are present and functioning. (We waited three months for a small adapter cable to connect the portable recorder to the camera; until it came we were not able to make a single tape!)

   Incidentally, the same principle applies "in country." The only way to know for sure that you have everything and that it all works is to set it all up and test the system before you drive three hours into the bush . . . and realize you forgot a cable!
3. Recharge the battery as soon as possible after field use, even if it means driving 50 miles to another town where there is electricity (as we did on occasion). Otherwise, the battery will run down. Also, it's a good idea to order extra rechargeable batteries.
4. Be sure to label each tape. The best time is immediately after you make it. Also pull out the red plug on the bottom of the cassette in order to avoid accidentally taping over something you've worked hard and long to create. (You can store the red plugs in an empty 35mm film can in case you want to re-record on the tape.)
5. Finally, build back-ups, redundancy, and contingencies into all your plans. Prepare to confront Murphy's most famous law: "Anything that can go wrong, will!" Take it in stride! ■

Daniel B. Prince is completing a two-year contract as one of the ERDM Project's advisors. Prior to going to Ghana he was a freelance writer and media producer in Nashville, Tennessee.

For further information, contact James Washington, Chief, Office of Development Administration, Accra (ID), Department of State, Washington, DC 20520, USA.

New Survey Under Way on Informatics for Education

The Association for Educational Communications and Technology (AECT), in collaboration with the International Council for Educational Media (ICEM), is conducting an international survey on the extent and the uses of the new information technology, or informatics, for educational purposes. Over 38 countries in Latin America, Asia, Europe, and the Middle East, including ICEM member countries, will be surveyed by questionnaire in the next few months to obtain a profile of the various applications of new technologies in the field of education.

The results of the survey, together with information from other sources, will be summarized in a report to be released at the ICEM annual meeting in Mexico City in late October 1982. Individuals or groups interested in contributing information or materials on this particular subject, or wanting to respond to the questionnaire, should immediately contact Dr. Henry T. Ingle, AECT, 1126 Sixteenth Street, N.W., Suite 311, Washington, D.C. 20036, USA. ■

Rainbow!
Children's Magazine Teaching Environmental Lessons in Kenya

by Judy Brace

Believing that a two-way exchange of information is the essence of communication, an innovative research institute in Nairobi has set out to celebrate the annual World Environment Day—and to discover what children know about their environment—in a unique way. Using the vehicle of *Rainbow,* an existing English-language weekly newspaper for children, the Mazingira Institute has, for the past four years, collaborated with the editor on the design, content, and production of one issue annually devoted to a single topic of development and environmental concern. In the past these special topics have been water, trees for food, and renewable energy. This year's topic, developed from the feedback received from the issue on trees for food, is generation and nursery development of tree seeds.

Rainbow, the only publication for children in Kenya, has a regular circulation of some 17,000 per week (25 percent Nairobi, 75 percent smaller towns plus some rural areas, readership 150,000) and sells for the equivalent of US 10¢. The press-run of the special environmental issue is increased to provide three to five free copies mailed to each of 10,000 primary schools in the country, with an accompanying letter of explanation to each headmaster. (English is the language of instruction in the schools.)

Learning from a Contest

The topical content of each issue is explored through a variety of features: an editorial, a theme article, a comic strip, letters, and a contest, which is the highlight of each issue. The contest centers around a series of approximately 12 carefully structured questions, the answers to which not only determine the winners, but provide valuable information about children's perceptions and understanding of the theme. Responses are tabulated and published in a form accessible to curriculum designers, development and environment researchers, and others with an interest in such matters.

The 1981 contest generated approximately 2,500 responses, almost all of which came from rural school children who are those most intimately acquainted with their natural and resource environment. Contest winners (there are some 10 different prizes) and their headmasters are brought to Nairobi for an awards ceremony. Headmasters meet at this time with Institute staff to provide further feedback on the use they make of the newspaper as a teaching tool. Many rural schools typically lack up-to-date, relevant materials.

A very special feature of each issue is a two-page comic strip story that features Mingu and Sweetie, a boy and girl whose interaction is free from adult influence. The episodes subtly modify male-female roles, and result in a solution to an environmental problem that the children have perceived. A panel of technical experts advises on the validity of innovations devised by the children, such as an improved three-stone cookstove to increase the energy efficiency of fuelwood. Elsewhere in the issue more detailed instructions for building such a stove are provided.

The entire development cycle of each issue of *Rainbow* is about 13 months, from conception to publication in May, contest deadline in September, winners selected and announced in the November issue of *Rainbow,* to the final tabulation and publication of the data received.

The first two years' issues were funded by local business or industry, while the third and this year's issues have been sponsored by the Canadian High Commissioner. Budget for the entire project is under US $30,000 (approximately US $3.00 per school), and includes staff costs, the printing and mailing of two issues (the environmental feature issue and the issue announcing contest winners), travel costs for winners and headmasters, and collection and printing of data from the questionnaire.

In the belief that this idea has applicability in any country, the Mazingira Institute in 1981 proposed an enlarged project, to include eight English-speaking countries in Eastern and Southern Africa, for funding by several international agencies, both as a way to gather local information from the countries' children, and to share with them information on the environment. ■

For further information about this project, contact Davinder Lamba, Executive Officer, Mazingira Institute, P.O. Box 14550, Nairobi, Kenya.

Judy Brace is the Assistant Director of the Clearinghouse on Development Communication. She recently spent a month in Kenya, visiting communications projects and collecting print materials for the Clearinghouse collection.

SEEDLINGS

By Diana Lee Smith

A Communicator's Checklist

1 *Global Talk,* by Joseph N. Pelton (The Netherlands, Sijthoff & Noordhoff, 1981), 336 pp.

Global Talk is a humane look at some of the staggering and often confusing advances made recently in the fields of communications, computers, energy, and space technology. Fortunately for us, author Joseph N. Pelton is one who can mix humor with expertise—he is an engineer, a political scientist, and a high-level telecommunications planner at INTELSAT. The result is a book that appeals both to serious communication professionals, and to those with an interest in where technology may drive us in the coming decades. In a way, *Global Talk* is a guidebook to the telecommunications world of the future.

Pelton does much to put the reader at ease. The tone throughout the book is conversational, and he is able to demystify each of the major subject areas treated. This is no easy task when dealing with fields such as electrical engineering, space technology, energy, and newly emerging links between communications and computers. Pelton's disarming asides make us want to read even the stickier parts, which include some unfamiliar names and sciences.

What can the reader expect from *Global Talk?* First, what the author characterizes as the essential looking back, the last 30 centuries of technological history. Then we are given a profile of each of the major fields handled in the book—telecommunications, computers, and energy. These cameo pieces are so deftly turned that after a mere 13 pages, the reader more easily understands the issues, advances, terminologies, and politics in the rest of the book.

The bulk of *Global Talk* relates the three central fields of information processing, telecommunications, and energy sources, current and future, to important intervening fields. Space stations are discussed as earth monitors, transmittors of energy, and places for future habitation. New urban planning models are projected as technology intensifies communication, and energy use is rethought, thus reducing the need to step outside our normal home or work spheres.

Pelton provides a useful compilation of present capacities and likely directions of information processing. For example, we are told that in 1849 the telegraph could transmit information at approximately two bits of information per second. One hundred years later, the computer enabled some 4,800 bits per second to be transmitted. (One can figure approximately 10 to 30 bits per word.) In a mere decade more, digital transceiving multiplied by 10,000 the amount of information transceived per second. In short, in the 1840s it took about 15 seconds to send a simple word over a distance, while today we are sending 16,000 words in a brief second. Much of this progress hinges on the Bell Laboratories' invention of the silicon chip, the powerful wafers at the heart of computers. (The author reports that toys are the greatest users of silicon chips, with weaponry a close second.)

One of the most powerful innovations of the new information age is "digitizing" and "packetizing" data information, which increases speed and cuts down on energy. AT&T is attempting to do the same with telephone conversations, and in the next decade, we should see video signals follow suit.

Pelton's intriguing new word in *Global Talk* is "telecomputerenergetics," which he uses to give the reader a lens on the merging of telecommunications, energy, and information processing. As traditional energy supplies are exhausted, and as transportation proceeds into radical new forms, relying more on information transfer and less on bulk and bodily movement, energy and other corporations will, according to Pelton, focus more on technology and less on resource extraction. Indeed, some large energy businesses, such as Exxon, are already competing in both fields.

Strides in space technology are expected topics for discussion from one situated in the world satellite planning agency. But Pelton reminds us that while great strides have been made in linking the globe with telecommunications, the critical work remains to be done on the ground. Both the industrialized and the developing countries need better switching and signaling devices. But for the developing countries, with fewer resources to expend, the costs of improving or even establishing national communications services—in laying cable, setting up exchanges, and providing homes and businesses with telephones—are staggering.

Global Talk does not treat the future of telecommunications as if it existed in a sterile test tube. Throughout, important economic, social, and political forces are examined for their bearings on current phenomena and future policies and products. Facts are compiled into convenient tables in the chapters and in the appendices, where the author gives a glossary of terms and tables on trends in world satellite growth and major cable systems.

The technological revolution, manifested largely by computers and telecommunications, is transforming business, industry, learning and entertainment in the industrialized world. Secretaries, bank tellers, and factory workers are being replaced by small, efficient machines. Time is saved, stress is taking new forms, and the way we interact at work and home is undergoing changes. Only for a time can the developing countries observe from afar the progress and mistakes wrought in every sector. For communications planners confronting this technologic age and attempting to plan for its future, *Global Talk* offers alternatives that form a useful base from which to frame intelligent planning questions.

If I were living outside the United States, as most of the readers of *Development Communication Report* are, I would acquire and read *Global Talk.* ■

Available for US $15.00 paper, US $29.50 cloth, from Sijthoff & Noordhoff/Kluer Boston Inc., 190 Derby Street, Hingham, Mass. 02043, USA; or from Sijthoff & Noordhoff, Alpen aan den Rijin, The Netherlands.

Reviewed by Jill Merrick, President of Merrick Communications, Washington, D.C., a firm specializing in media production and information management. She was formerly the Director of the Clearinghouse on Development Communication.

2 *Approaches to Communication Planning,* edited by John Middleton (Paris, Unesco, 1980), 300 pp.

In the Preface to *Approaches to Communication Planning* we are told that "Planning for communication institutions and systems has long been part of Unesco's Programme, but it is only during the last five years that it has been approached systematically, as a coherent field of operations and research. Over this period a range of activities—including training, methodology studies, and project development—has focused upon the needs and problems of integrated planning for communication systems, especially at the national level. One of the strands of the programme has been the development of materials, and this anthology is the first of several publications to emerge. As such it is deliberately introductory; in its chapters, a number of specialists from a wide range of disciplines discuss the applicability of their field to the communication sector, and the problems posed by adaptation."

Thus we have in this anthology an overview of the various approaches to communication planning, followed by five distinct but related approaches: the process approach, dealing with the use of theory *in* communication planning as well as theories and perspectives *on* the planning process itself; the systems approach, dealing with systems analysis, modeling, and simulation; the technological approach, dealing with elements of communication technology, followed by a chapter on short- and long-term forecasting for communication technology planning; the economic approach, covering economic analysis and communication decision-making, as well as financing and control of capital intensive broacasting systems; and the evaluation approach, outlining the uses of evaluation in policy definition, systems design, system implementation and assessment of system impact.

Later in the Preface we learn that this collection of essays is intended for a variety of readers: "Its main audience, evidently, is those who are responsible for the preparation of communication plans and for their implementation, at either sectoral or national levels. But as a contribution to a new field, it should also be of interest to communication researchers and practitioners, and to planners and researchers in other fields, especially those whose longer-established disciplines are now making a contribution to the communication sector."

The only argument I have about this assessment of audience interest is that much of the book strikes me as being too difficult for the communication planner who is entering into this area of planning for the first time, and who might perhaps benefit from a slightly less theoretical approach.

In fairness to the editor and authors, I should point out that other volumes in this series of monographs are going to be more operational in their orientation, and perhaps of greater utility to the planner who must work under the political and economic pressures that are inherent in any kind of national or sectoral planning. In spite of these reservations, the essays contain a great deal of valuable information that will surely benefit communication planners throughout the world. While no essay can treat any of these communication planning approaches in an exhaustive manner in 30 to 40 pages, the rudiments are there, and most of the chapters contain helpful references that can be consulted for further elaboration of the themes. Some of the essayists communicate more gracefully than others, but that is to be expected in any anthology since it is almost impossible for an editor to reconstruct the work of each author to give the book a single style of writing.

Finally, although the book taken as a whole is a coherent approach to communication planning, many chapters are worth reading on their own merits. John Mayo's chapter on evaluation, for instance, is an excellent statement on evaluation and communication planning. It is clear and precise, and well illustrated with specific examples. It could be read as an integral part of the anthology, or it could be read with great profit and pleasure as a self-sufficient essay. ■

Available for US $23.25 from Unipub, 345 Park Avenue South, New York, NY 10010, USA; or from Unesco, 7 place de Fontenoy, 75700 Paris, France.

Reviewed by Richard Burke, Professor of Telecommunications, Indiana University.

3 *DCR* readers concerned with the implications of communication and information technologies will be wise to get themselves a copy of the recent issue (1981:2) of *Development Dialogue,* entirely devoted to issues of the New World Information and Communication Order (NWICO). Although *Development Dialogue* is a journal of the Swedish Dag Hammarskjöld Foundation, this issue was produced by the Latin American Institute for Transnational Studies (ILET) in Mexico. Material in the journal is divided into two parts: the first consists of new articles on various subjects related to the NWICO; the second part contains reprints from a very popular (and now out-of-print) issue of *Development Dialogue* from 1976 that marked the beginning of the worldwide debate.

Mirroring the trend away from theoretical debate on international information flows to focus on consideration of national communications structures, this issue of the journal reviews social issues of communication and internal obstacles to true two-way communication, applications of microelectronic technology, and new organizations that are emerging to facilitate change locally and internationally.

The particular perspective of ILET supports the democratization of the communications structures, while at the same time acknowledging that the major obstacles to information flow to and from the people are locally generated—by advertising pressures, patterns of ownership, and political considerations. In other words, it is not necessarily accurate to blame external interests for inadequate internal social representation.

Deserving of special note is Juan Rada's article on the implications for the Third World of the microelectronics revolution, a particularly comprehensive review of technology and the way it is transferred, the information that is delivered by this new technology, and the possibility "of economically combining and integrating different layers of knowledge and experience (that) can serve to bridge the gap between the theoretical potentiality of a given local technology and the concrete study of its viability in mass production."

Four suggestions are made for a common Third World policy with respect to taking command of technological assessment and forecasting, developing a common communication policy toward transborder data flows, satellites, and technology transfer, and joint action to push for free access to international data bases.

We should never lose sight of the fact that information is a "social good" and should never be used as a tool of power. It is indeed incumbent on developing nations to ensure that their cultural integrity is not submerged by the Western communication model. This article, and others in the journal, are worthwhile reminders of the internal struggles yet to be resolved.

Copies of this issue of *Development Dialogue* may be obtained from the Dag Hammarskjöld Foundation, Övre Slottsgatan 2, S-75220 Uppsala, Sweden; or from the Latin American Institute for Transnational Studies, Apartado 85-025, 10200 México, D.F., México. ■

Reviewed by Judy Brace.

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In actuality, the training of both farmers and technicians (*ayudantes de campo*) is accomplished by a mobile videotape playback system. Para-technicians, known as agricultural extension agents, transport the video equipment from village to village on a regular basis, ensuring that follow-up visits by agronomists and other specialists are scheduled and carried out. Most follow-up activities will be supervised by the local extension agent nearest to the participating cooperatives.

Farmers Enthusiastic about Training

The results of the recent incorporation of a videotape program on soil preparation for tomato cultivation have been good. Farmers receive this unique aspect of training with enthusiasm. It should be noted, however, that occasional foul weather interferes with a video presentation.

The findings this five-year project may be replicated nationwide, with adjustments for climatic and other regional variations, depending on the success of the new technological procedures being tested. ■

For further information, contact Mary Hogan, CREDICOOP Volunteer Coordinator, Cuerpo de Paz, Embajada de EE.UU., Asunción, Paraguay.

Milt Shaw is a Peace Corps volunteer in Paraguay. He has worked as a patient education coordinator for the University of California, San Francisco, where he developed education and information audiovisual programs for patients and staff at San Francisco General Hospital Medical Center.

Information Across the Mountains

The Nepal Agricultural Documentation Centre has put the country's researchers in touch with one another, and with the rest of the world.

by Ram Prakash Yadav and Clive Wing

A Nepali student studying overseas recently returned to Kathmandu on a brief visit to collect information for his dissertation on the economics of fertilizer use on rice and wheat in Nepal. His university library had been unable to locate suitable literature sources. He turned to the Nepal Agricultural Documentation Centre (NADC) for assistance.

After defining the scope of his requirements, the library's staff guided him through a literature search of their collections. They also translated his topic into a search question that was used to interrogate the data base of FAO's International Information System for the Agricultural Sciences and Technology (AGRIS) in Vienna. The result: a 65-item bibliography.

Journal articles cited in the bibliography that were not held by NADC were traced using the Union List of Serials in Agricultural Libraries and photocopies were ordered from the British Library Lending Division. Having obtained sufficient data so quickly, the student was able to visit key personnel and compose a draft of this thesis before leaving Nepal. Like many users of NADC's information system, he was surprised how easy it is to obtain exact information.

Three years ago, he would not have been so fortunate. Undertaking agricultural research in Nepal, as in many of the least-developed countries, was tantamount to hunting for needles in haystacks. Although much has been written since 1951 when Nepal opened its borders to the world, finding out what still existed—and where—constituted a research program in itself.

In fact, while many development projects, particularly in hill farming, had been carried out in Nepal, information on them was not organized or disseminated. The main reason was the lack of library facilities. Until 1951, public libraries were illegal in Nepal, and only after political reforms in 1958 did library development get underway. The main impetus did not come until 1975 with the publication of a Ford Foundation report that advocated a central government library system.

The NADC was established in 1978 under the auspices of the Agricultural Projects Services Centre (APROSC)—an autonomous body for project development, evaluation, and support—to organize national literature and provide information on request. From a modest beginning, and with support from FAO and IDRC, it quickly expanded to become both a national centre and AGRIS' input centre and liaison office in Nepal.

Today, NADC is the only source of national rural development and agricultural documentation in Nepal. Other libraries exist, but none have collected and preserved non-conventional literature—unpublished technical reports, seminar papers, government documents, theses, and mimeographed papers—that map Nepal's modernization efforts and priorities.

This collection—the most complete ever assembled in Nepal—is the foundation of NADC's information services. The system and services are simple but effective. Local producers of agricultural information deposit their reports with NADC, which indexes them, inputs bibliographic details to AGRIS, and makes their existence widely known to the national agricultural community. The system works because users realize that the output—what they require—can only be obtained if they provide the input.

The main vehicles of information dissemination have been a topical Occasional Bibliography series—10 issues have been published to date—and a monthly accessions list, both of which are widely and freely distributed. These are now augmented by the Nepal Agricultural Abstracts, based upon nonconventional literature and journal articles, and the Nepal Agricultural Bibliography. Compiled for the most part from NADC's current AGRIS input, the Bibliography contains 2,484 references.

Publications such as these are the most effective means of disseminating national research results in Nepal, especially as some recipients live in extremely remote mountain areas, seven days distant from Kathmandu, with the postal service their only means of communication.

A Scientific Literature Service (SLS) that involves photocopying the contents pages of current journals and providing users with a full copy of any article of interest was started some time ago. Linked to this is the photocopying of citations on specific subjects from the monthly AGRIS output bibliography, AGRINDEX. This service is tailored to the exact needs of recipients. Requests for full copies of cited material are supplied using the British Library Overseas Photocopy Service.

NADC is now concentrating on organizing the collections of other agricultural libraries, in most cases attached to research farms, to ensure their effective use. A fledgling agricultural information network has evolved as NADC staff visit these widely scattered libraries, catalogue their collections, create union catalogues, and arrange for the purchase of books and journals. There are no librarians in these libraries. Information and requests for information are channeled through farm personnel. Recently, NADC brought these "sometime librarians" to Kathmandu for a workshop devoted to methods of organizing their libraries with the minimum of time and effort.

An increasing number of information requests come from overseas as a direct result of Nepal's input to AGRIS. This is good news for local agriculturalists whose research results were previously unavailable in the rest of the world. All documents produced in Nepal are put on microfiche to provide a permanent record of local intellectual efforts and make the materials readily available to local and foreign users. In recent weeks, this information has included topics as diverse as people's participation in development projects in South Asia, average dung production of local hill cattle, and fuelwood consumption in various regions of Nepal.

The only centre in Nepal collecting a body of information whose importance is matched by its elusiveness, NADC has risen to a position of prominence among the country's libraries. The services it offers are unique in a country where many library collections were—and still are—kept under lock and key. NADC's willingness to reach across the physical barriers of Nepal's rugged topography and share its resources and expertise among the agricultural community is an important contribution to the country's development efforts.

The documentation centre's greatest mark of success, however, is its fully professional and trained staff who have initiated simple and effective programs that are now self-sustaining. The experience and knowledge they have gained during the past three years mean that a planned and structured growth of NADC is assured. ■

Ram Prakash Yadav and Clive Wing are Executive Director, APROSC, and former IDRC consultant to NADC, respectively.

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Flannel Board Update

A number of readers have requested more information about the "Visual Learning System" described in *DCR* #36. The system uses portable magnetic boards with plastic illustrations which stick on them in up to eight layers. Manufactured by Cassell Ltd., the boards are in use in development projects in Egypt, Tunisia, and Jordan. Additional modules are being designed for projects in Kenya, Nigeria, and South America. For further information about the system and its costs, please contact Cassell Ltd., 35 Red Lion Square, London, WC1 R 4SG, England.

Lettering Instructional Materials

by Lucille Burbank and Dennis W. Pett

Words are frequently used on visual materials such as slides, overhead transparencies, charts, maps, flip charts, and flannel boards. Often too many words are used. Words should be kept to a minimum, especially when preparing materials for use with people who are at a low literacy level. There are three major purposes for using words on visual materials.

1. Words can be used to label all or part of an illustration. An example is map labeling or naming parts of an object drawn on a flip chart. A label adds an additional cue enabling literate persons to increase their learning.
2. A second function of words in a visual (or illustration) is to describe visual elements, pointing out specific details or characteristics of an object.
3. Adding supplemental information is a third function of lettering. This may be done by the addition of descriptive words or phrases to the visual elements.

When illustrations accompany a discussion, the words used in the visual materials should not merely repeat what a speaker is saying. If it is important for members of an audience to remember words, and if the audience is literate, then the words should be given to them in the form of a printed handout. In such cases, remember that writing should be kept simple. Excess content should be avoided and word and sentence structure should be at the literacy level of the audience.

Assuming you have carefully chosen the words to be used on visual materials, the most important characteristic of effective lettering is that it must be legible. All members of the audience should be able to read the words at normal viewing distances. In the early days of a radiovision project in Nigeria, the radio teacher talked about places on a map that were to be pointed out by the classroom teacher. The maps were typical commercial maps designed for individual study at close range. Nobody could read the words. Later, special maps were designed and produced using letter sizes large enough to be read at a distance by all students in the class. Four factors contribute to legibility:

1. **Size**
   On artwork for overhead transparencies or slides, lettering should be about 1/25 of the height of the artwork. For example, if the artwork is 15 centimeters high then the lettering should be about 6 millimeters high. There are a lot of rules relating to optimum letter size, but the best way to check is to prepare a sample and try it out with a few persons from your audience at the farthest distance that the lettering will be viewed. Similarly, bulletin boards need to have lettering large enough to be easily read. Sometimes only the title needs to be read at a distance, attracting attention so the viewer will move in closer to read the details. The basic guideline for lettering is BIG and BOLD. (Fig. 1)

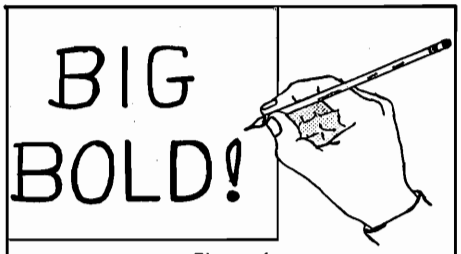

Figure 1

BIG and BOLD is the basic guideline for effective lettering.

2. **Style**
   Lettering style is another consideration for legibility. In general it can be said that simple styles are more easily read than complex styles. (Fig. 2) This is particularly true for audiences with low literacy levels. Lines of type using a combination of capital letters and lower case letters are more easily read than lines of all capitals.

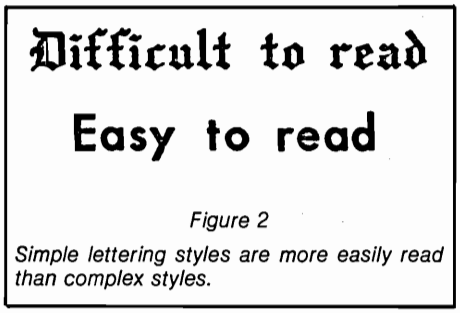

Figure 2

Simple lettering styles are more easily read than complex styles.

3. **Spacing**
   A third factor affecting legibility is spacing. Effective lettering is carefully spaced. The areas between letters should be approximately equal. (Fig. 3) Spacing between words and between lines must also be considered. If the spacing is too close or too far apart legibility is reduced.

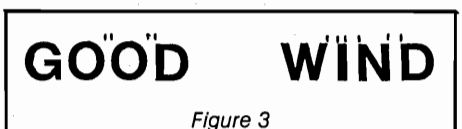

Figure 3

Note the approximately equal spaces between the letters. Letters like O and C should be slightly closer together than letters like I and N or N and D.

4. **Contrast**
   A fourth point to be considered is contrast. Too little contrast makes reading difficult and too much is not pleasing to the eye. The latter is particularly true in slides, overhead transparencies, or other projected materials. (Fig. 4)

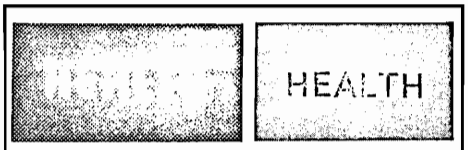

Figure 4

Too little contrast makes lettering difficult to read.

To be effective, lettering must do more than provide the proper information and be legible. It should be attractive to encourage the audience to look more closely. Black on white or light gray is clearly legible, but good use of color often increases the impact of a visual presentation. Bright attention-getting colors that attract the viewer's eye are particularly important for bulletin boards and displays. Interesting and appropriate styles of lettering can increase the attractiveness of instructional materials, and unusual patterns of lettering can be used to increase viewer appeal. (Fig. 5) However, be certain that fancy layouts do not create confusion. To maintain credibility, lettering must convey accurate content; even minor errors can be confusing to learners. Remember to be sure spelling and punctuation are correct.

Figure 5

Interesting styles of lettering can increase the attractiveness of instructional materials.

Written elements should be carefully related to visual elements. Sometimes arrows or connecting lines can help avoid confusion, but be certain your audience understands these conventions. When designing lettering for instructional materials, it is a good idea to check the words in your pictorial materials with a sample of the intended audience. This pretesting can help you develop more effective materials. ■

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On File at ERIC

Clearinghouse activities of the Non-Formal Education (NFE) Information Center and Network and bibliographies of its core resources; information and resource needs of persons working in the area of women in development; and the link between social structure and communications systems, and policy implications resulting from this relationship, are the focus of reports from the Educational Resources Information Center (ERIC) files reviewed in this column. All are available on microfiche and in paper copy from the ERIC Document Reproduction Service (EDRS), P.O. Box 190, Arlington, Virginia 22210, U.S.A.

- Claffey, Joan M. et al. ***An Analysis of Inquiries Regarding Women in Development as Directed to the Non-Formal Education Information Center by Development Planners, Practitioners, and Researchers.*** East Lansing: Michigan State University, Institute for International Studies in Education, 1981. 181pp. (ED 207 601)

Designed to identify the information and knowledge resource needs of persons working in the area of women in development (WID), this study analyzed inquiries directed to the Non-Formal Education (NFE) Information Center to determine the nature and frequency of requests and the variables that distinguish kinds of WID interests and resource needs. This report includes a statement of the problem, a description of the research design and methodology, an extensive analysis of the data including 28 graphs, a glimpse of WID-related inquiries received since the formal data collection process, and an assessment of current trends. The report summary discusses implications for the generation and exchange of knowledge concerning WID, the meaning of different development orientations for researchers and practitioners, the role of networking, the dynamics between research and application, and strategies for providing for complex WID knowledge and research needs. Available from EDRS in microfiche for 91¢ or paper copy for $13.55 plus postage.

- Claffey, Joan M. and Pigozzi, Mary Joy. ***The Non-Formal Education Information Center and Network. A Report of Progress. Annual Report of the NFE Network Project: Operating a Clearinghouse on NFE Information (September 1979-August 1980) and Two Semi-Annual Reports of the NFE Network Projects: Providing Technical Assistance in Creating LDC National/Regional Information Centers (March 1980-August 1980; September 1980-February 1981).*** East Lansing: Michigan State University, Institute for International Studies in Education, 1981. 103pp. (ED 207 613)

This report describes the clearinghouse activities of the Non-Formal Education (NFE) Information Center through August 1980 and details efforts, during the project's second and third biannual periods, to strengthen the capacity of select NFE resource centers in Africa, Asia, and Latin America. The report first addresses the continued operation of a clearinghouse for user-oriented information and knowledge-building related to nonformal education and development, and includes demographic data on the worldwide network and a discussion of center activities. It goes on to examine the Center's work in providing technical assistance toward creating national/regional NFE centers in developing areas. Included are references to visits made to organizations in the Philippines, Thailand, and Kenya, formal agreements of cooperation, and inservice training programs at Michigan State University. The report summary identifies the relationship between the technical assistance and clearinghouse activities of the Center, and summarizes concerns that may need special attention in the next year. Available from EDRS in microfiche for 91¢ or paper copy for $8.60 plus postage.

- ***NFE Core Bibliographies.*** East Lansing: Michigan State University, Institute for International Studies in Education, 1981. 203pp. (ED 207 612)

This collection of core bibliographies, which expands on an initial bibliography published in 1979 of the core resources housed in the Non-Formal Education (NFE) Information Center at Michigan State University, comprises a basic stock of materials on nonformal education and women in development that has been contributed by development planners, practitioners, and researchers in the NFE Network. Arranged by sectors, audiences, and issues of interest to users, sources are listed in 38 subject areas. Additional sources on Africa, Asia, and Latin America are also provided, as well as lists of journals, newsletters, and recent core acquisitions. Available from EDRS in microfiche for 91¢ or paper copy for $15.20 plus postage.

- White, Robert A. ***Structural Change Criteria in the Selection of Strategies of Communication for Development. An Examination of Two Contrasting Media Systems—National Television and Local Public-Service Radio Stations—in the Light of Structural Change Criteria.*** Paper presented at the Annenberg School of Communications Conference on Communications for the 1980's, May 1980. 27pp. (ED 210 033)

This paper discusses the important link between social structure and communications systems and explores some of the practical policy implications resulting from this relationship. First, the concept of social structure as the basis of a pattern of communication is clarified. Then, one paradigm of communication structure typical of many Third World countries is analyzed and the criteria for communications implied in this structural process are summarized. Finally, an examination of the evidence of the importance of the "intermedia media" such as local public-service radio provides an example of the application of structural criteria in selecting alternative communications strategies. Available from EDRS in microfiche for 91¢ or paper copy for $3.65 plus postage. ■

Marilyn Laubacher, User Services Coordinator, ERIC Clearinghouse on Information Resources, School of Education, Syracuse University, Syracuse, New York 13210, USA.

(continued from page 2)

ducted in Asunción, Paraguay's capital, by personnel from the Peruvian government's Audiovisual Production Center for Training (CESPAC).

In August of 1981 the AV section began production of a series of instructional videotapes on tomato cultivation. A video program for one crop may consist of eight to twelve segments lasting five to fifteen minutes illustrating seedbed preparation; plant spacing; control of weeds, plant diseases, and pests; preparation of the soil; irrigation, fertilization, and pruning techniques, etc. As the research and scripting of each segment is completed, the AV section videotapes a Crop Intensification Project participant who has been introduced to the production techniques.

Before the videotape is used as a training tool, each segment, complete with narration in Guaraní (the Indian language most common to the farmers), is shown to agronomists or technicians to verify its technical accuracy and clarity.

The sequence of videotape used in actual training consists first of an explanation of the program, then two showings of the tape which are followed by comments from the trainer and an agronomist, and finally a discussion by the participants. The training includes practicing various aspects of the program in the field, if applicable.

Print materials have been developed to complement the training. As a means of reinforcement, the participants are given a short questionnaire covering information in the videotape and a simple illustrated pamphlet (*cartilla*) that reviews the most important aspects of the video program.

(continued on page 9)

Some Recommendations for Improving Population Education

The current issue of Population Reports, *from which this article is reprinted, is devoted to worldwide population education in the schools. Articles include accounts of population education in India, The Philippines, the Republic of Korea, the U.S.A., and Sierra Leone. A splendid 624-item bibliography includes population education materials and teaching aids as well as articles and books.*—H.R.

Based on the overall experience to date, the following specific proposals are suggested to carry out and improve national population education programs:

Planning and Administration

- Establish a population education unit at a high level in the Ministry of Education, with authority to plan, develop, and implement the program and to cooperate with other public and private agencies. A curriculum development unit alone may not be enough.
- Orient high-level personnel to population issues and to the nature and goals of population education. This will help to build support for and facilitate implementation of programs throughout the school system.
- Issue clear directives to managers and supervisors at provincial and lower levels and follow up as required, using workshops and other means to explain the new program and to ensure implementation at the local level.
- Develop programs for primary schools where enrollment rates are highest.
- Start new programs on a small scale, with only a few grades and/or classes involved, then phase in new material gradually.
- Allow ample time early in the development of a program for pilot tests in the classroom of curriculum changes, teaching materials, and methods.
- Work with testing agencies to incorporate questions about population issues into regional or national achievement exams.
- Assess out-of-school educational activities to assure that in-school programs support and expand rather than duplicate these activities.
- Work closely with nongovernmental agencies, religious groups, community leaders, and others to build support for the program.

Curriculum Planning

- Whenever possible, time the introduction of population education to coincide with overall curriculum revision so that population topics can be introduced directly into the standard textbooks and teachers' guides as they are revised.
- Involve classroom teachers in deciding how and when population issues should be introduced in various subjects.
- Focus on a few basic issues at the primary school level, such as how families grow and the need for planning in daily life, and leave more complex ideas for higher grade levels.
- Organize special events or activities to promote population education. Such activities could include exhibitions, special "population days," essay contests, or "population oratorical competitions" for secondary school students.

Training Teachers

- Provide at least one week of training and preferably more, with much personal contact between trainers and teachers.
- Give teachers practical training, such as developing lesson plans or making simple visual aids.
- Provide continual opportunities for follow-up of training courses and for refresher training.
- Develop required courses in teacher training institutions early in program development so that in-service training needs can be reduced.
- Use radio broadcasts aimed specifically at teachers in order to supplement more traditional approaches.
- Encourage teachers at all levels to be trained in population education so that the field is not limited to experts but is recognized as a subject that everyone should know about.

Materials

- Provide detailed classroom materials for teachers to use, such as lesson plans, descriptions of teaching methods, and textbooks.
- Integrate population content into basic textbooks and teachers' guides, since these are more likely to be widely distributed and used in the classroom than any supplementary material.
- Provide teaching aids, especially student booklets, workbooks, and visual materials, that can help teachers to explain difficult concepts.
- Keep materials as simple as possible, in the local language, and use examples relevant to the community. The basic objective should not be to train demographers, but to give all children some familiarity with population issues that they will face.
- Develop additional channels for sharing population education materials among countries, regions, and individuals.
- Where radio or television is used in the classroom for other subjects, use it for population education as well.

Evaluation

- Conduct research studies to evaluate new teaching techniques or materials before they are introduced widely in the schools. Then revise curriculum plans or materials as indicated.
- Survey teachers to find out how much population content is actually taught in classrooms. If the level of implementation is inadequate, find out what is needed to implement the program fully.
- Assess the effects of various population units on student achievement to determine what types of units communicate important concepts most effectively.
- Experiment with methods of measuring attitudes and attitude changes—for example, asking students to imagine themselves in a specific population-related situation that would require them to choose a course of action.
- Recognize that the success of a program depends on strong government commitment to population policy and on stable leadership at a high level. ■

J. D. Sherris and W. F. Quillin, "Population Education in the Schools." Reprinted by permission from Population Reports, *Series M, Number 6, March-April 1982. Population Information Program, The Johns Hopkins University, Hampton House, 624 N. Broadway, Baltimore, MD 21205, USA.*

(continued from page 16)

they make from their farms," explained Sangvien. "I gain a lot of knowledge from books and magazines and now I publish a newsletter for other small-scale farmers like myself. I write out the information by hand and the extension office in Phichit prints it and distributes it free to other farmers. My language is at the same level as other farmers, so my newsletter is easy to understand; we can all improve our life by imitating the proven ideas of other people." A relatively prosperous farmer, Sangvien devotes much of his time to helping other farmers. He also serves as *kamnan* or the elected chief of his sub-district, a position he has held for the last 14 years.

Sangvien's life is a far cry from the days when he started out on his own as a hired helper. "I had only 32 baht to my name when I left home," he said. He credits his good fortune to the help others gave him. "Many good friends helped me all through my life. I began by taking whatever work I could find, but a good friend wanted me to be nearby so he let me use 11 rai of his land rent free just so we could be together. I stayed on his farm for eight years, but after the birth of my first child, I wanted to have a farm of my own. I moved closer to my parents near Phichit. When my former teacher discovered that I was back in the area, he offered to sell me a piece of land to get me off to a good start. He wanted me to be nearby and was willing to wait for payment, so you can see how much my friends have helped me. I hope I can help other people now by showing them what I have learned; there's no benefit to be gained by keeping this knowledge to myself."

The Department of Agricultural Extension makes every effort to ensure that the knowledge of farmers such as Sangvien is made available throughout the country. If a farmer wants more information on Sangvien's methods, the Department will provide him with a transcript of the radio or television show along with additional technical material through local extension offices. Besides emphasis on media such as printed literature, radio, and television, the Department also uses the training and visiting extension method to reach farmers.

Since 1977, Thailand has been expanding its extension program with the implementation of a national agricultural extension project, which is financed partly by the World Bank. The project is aimed at improving agricultural extension services that reach millions of farmers throughout Thailand. It is focused mainly at strengthening the communications links between farmers and technical information sources. ■

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(continued from page 5)

modernize and preserve export markets through recourse to new microelectronics techniques will probably be forced to allow either joint venture agreements or outright production ownership under foreign control. And despite Servan-Schreiber's exuberance in promoting the village terminal concept, Hoffman wonders how a poor, illiterate farmer could actually make use of the information such a terminal could provide.

Technical Problems Persist

In spite of these reservations, it seems clear that the world is on the threshold of radical changes in the ways in which goods and services are produced and distributed as well as the manner in which information is generated, managed, and diffused. To be sure, there are some very practical technical problems remaining before microelectronics can truly have major impacts—good or bad—on developing countries. These include maintenance and availability of spare parts, issues of unreliable electrical power, and noncompatibility of hardware/software systems. The major obstacles however, are of a political or sociological nature. For example, some governmental telecommunications agencies levy high surcharges on international data access since such access is viewed as competition to established and lucrative services like telex.

Worldwide Computer Use

The introduction of computer technology may also threaten the distribution of power in entrenched bureaucracies. In spite of the potential problems, a recent survey of USAID missions worldwide ("Analysis of Known Microcomputer Applications Being Used on Development Projects Funded by USAID," Development Project Management Center, U.S. Department of Agriculture, Feb. 20, 1982) by the U.S. Department of Agriculture concluded that nearly 70 AID development projects with an emphasis on agricultural resources assessment and management applications are already being assisted by microcomputers in over 30 developing countries.

DEVELOP, VITA

More than a dozen U.S.-based development and information organizations, including the Clearinghouse on Development Communication and Volunteers in Technical Assistance (VITA), are currently entering a wide range of technical and socioeconomic information into Control Data Corporation's DEVELOP data base, which will be available for on-line searches worldwide (previously described in *DCR* #36). Additionally, many national microelectronics initiatives are under way. The Peruvian National Board for Science and Technology is actively exploring the possibility of establishing a scientific research data base which will ultimately link isolated regional universities throughout the country.

It is inevitable that much more activity will be undertaken as costs continue to decline and technological developments proceed at a dizzying pace. Recent advances include the combination of advanced computer and video technology in the production of laser-optical discs. When perfected, such systems will allow huge numbers of documents to be "read," stored, retrieved, and displayed, and could, some predict, make traditional hard-copy libraries obsolete. (Japan's Toshiba Corporation has reportedly just introduced one such system.)

Room for Creativity

In spite of the obvious risks, this writer believes that the new information age has much to offer developing nations. While the dictum that "knowledge is power" suggests that information be viewed as a commodity, there is an elusive character to information that defies attempts to limit its "ownership." For one thing, programs and data are easily copied onto inconspicuous cassette tapes or floppy discs. For another, it is not always recognized that Third World entrepreneurship is generally remarkably innovative given constantly adverse conditions, and will undoubtedly produce some interesting results, especially in tailor-made software packages. The inherently flexible quality and creative possibilities in nearly all imaginable applications of microelectronics means that good fits between needs and resources can be achieved. Microelectronics is obviously so much a part of the twentieth century that Third World skeptics will not be as inclined to dismiss it as "inferior" as they have many other low-cost "appropriate technologies." Microelectronics at least allows for the existence of democratized and decentralized information systems as an equity-enhancing possibility. ■

Gary Garriott is a senior technical advisor at VITA with a special interest in renewable energy and technology transfer.

WASH Needs . . .

The Water and Sanitation for Health Project (WASH) is seeking information on water- and sanitation-related health education materials indigenously produced and used in developing countries. The purpose of this search is to identify and acquire materials for inclusion in a bibliography and resource manual. The manual will be made available to USAID missions, developing country governments, and local and international organizations. Please help us by sending names and addresses of centers that produce materials to: Kenneth McLeroy, Research Triangle Institute, P.O. Box 12194, Research Triangle Park, NC 27709, USA.

Mujer-Tec: an Appropriate Intervention

by Sonia Andújar

In a country where conservatism and traditional value systems place females firmly in the home, the thought of having women participate in the technical aspects of the mass media industry is usually dismissed as sheer nonsense.

For the members of *Mujer-Tec,* however, the absurdity lies in the fact that women are denied the chance to develop their tremendous potential because of sexual stereotypes and other kinds of discrimination.

Mujer-Tec (*mujer* means woman in Spanish) is an action and advocacy group, an indigenous nongovernmental organization (NGO) in the Dominican Republic that is devoted to promoting community action through the use of the media. Its activities are focused on the development of women's technical and leadership roles in the media so that women, through their work, can introduce positive changes that will benefit the status of all women. *Mujer-Tec's* objectives are:

- To train women in non-traditional jobs in communications;
- To produce educational material in the areas of health, education, and employment as those areas concern women;
- To encourage research that analyzes, evaluates, and recommends changes in the field of communications as that field relates to women's struggle for equal participation in Dominican society.

Members of *Mujer-Tec* have to be professionally involved in media work. The organization currently has 25 active members, 5 men and 20 women, and about 50 communications students and interns who contribute their time to specific projects. All work is done on a voluntary basis.

The organization is currently seeking funds to establish a Communication and Information Center, which would be the umbrella organization to coordinate *Mujer-Tec's* various activities that concern women and communication for development.

The founding of the organization was the culmination of a long process of informal collaboration on projects concerned with women and media, projects which various members of *Mujer-Tec* have been involved with since 1973. These have included radio and TV productions, planning activities, and interviews with women, as well as other activities involving women's access to the media.

The women concerned came to the conclusion that a new perspective on women's roles in the media was essential if change was to occur. *Mujer-Tec,* which is politically independent and has no religious affiliation, believes that women must use the media effectively to persuade people in power of the importance of women's development. *Mujer-Tec* actively supports action that will permit equal participation by women in all sectors of development. This includes seeing that women share the benefits of training in science and technology.

Mujer-Tec Documentary

Mujer-Tec's TV and radio productions have ranged from Community Reports to a TV documentary, "Women in Mental Asylums." (Even now, though, editing of the television productions continues to be done by men.) While programs produced by *Mujer-Tec* focus on the way the media can be used for development, the two other TV series in the Dominican Republic produced for women teach them how to walk, how to use make-up, how to dye their hair, how to hold on to a man, etc. *Mujer-Tec's* concerns are more serious. They want women of ability in decision-making positions, behind the cameras as well as in front of them.

Even though sex discrimination is prohibited by law in the Dominican Republic, the sexual stereotypes deeply rooted in the traditional society are usually the guidelines by which women are treated. (This pattern, of course, is familiar to women throughout most of the world.) *Mujer-Tec* is initiating programs to create awareness among women of their legal rights.

Mass Media in the D.R.

In the Dominican Republic, post-secondary educational opportunities are usually given to men only, and the media reflect this inequality. For a country with a relatively modest gross national product, the quantitative growth of the mass media in the D.R. has been impressive. The country has at least 105 radio stations with 163 frequencies, 7 TV stations with 11 relay stations, and 9 newspapers. In these enterprises, 98 percent of the managerial and technical positions are held by men. The government-owned TV/Radio station, for example, has 428 employees. Of these, 96 are women in traditionally female occupations. As of this writing, there are no women at all in executive or technical positions.

Although the media is expanding, there is still a widespread lack of trained technicians, particularly female ones, because, as is the case in most countries, new entrants are expected to be skilled and qualified enough to make formal training unnecessary. A few Dominican women have taken non-paying jobs with the media to gain on-the-job training and skills, but they find that they are not treated seriously. Even after women have been partially trained, the men who make the employment decisions reject them, feeling that having women on technical teams will lead to sexual distraction and interfere with the men's work.

Such uneasiness about female technicians, coupled with the discriminatory belief that media jobs demand qualities which women lack because of their gender, are constant barriers to women's efforts to gain entry into technical fields. *Mujer-Tec* believes that the training of women in communications is vital, especially if there are to be changes in the future which will permit women to be involved in the socio-economic and political development of their country.

Concern about the involvement of women in the technical aspect of media work is a new departure for females in the Dominican Republic, and *Mujer-Tec* is the only organization dedicated to such pioneer work.

Scholarships Sought

Because *Mujer-Tec* does not yet have the funds to set up training programs of its own, it has directed its efforts to finding scholarships for members. The hope is that the organization can thus form an in-country team of trained women who can then train other women. So far, a corps of women has been trained in management, photography, TV production, and organizational skills.

Other educational efforts of *Mujer-Tec* include the production of educational and audiovisual materials. The organization has produced a TV Special Report on "Working Children," a pamphlet on women in prisons, and many articles on women's contributions to various projects. *Mujer-Tec* firmly believes that the media have a positive developmental role to play in improving women's status. That is why, in the Dominican Republic at this time, *Mujer-Tec* is a very appropriate intervention. ■

Sonia Andújar is Co-Director and International Coordinator of *Mujer-Tec,* and an independent film producer.

For further information, contact Sonia Andújar, Mujer-Tec, *Apartado Postal 284-9, Los Rios, Santo Domingo, Dominican Republic.*

Development Communication Report, published quarterly the by Clearinghouse on Development Communication, has a circulation of over 5,000. Subscriptions are available free of charge to readers in the developing world.

A center for materials and information on important applications of communication technology to development problems, the Clearinghouse is operated by the Academy for Educational Development, a nonprofit planning organization, and supported by the Bureau for Science and Technology of the U.S. Agency for International Development as part of its program in educational technology and development communication.

Readers are invited to submit typed manuscripts of no more than 1000 words, and to send in photographs.

In Thailand, Farmers Teach Farmers With Help of Radio and Television

Thailand broadcasts the stories of successful farmers over radio and television in order to encourage other farmers throughout the country to adopt technical improvements which will increase their agricultural yields. In the case of 55-year-old Sangvien Chamto, the broadcasts are expected to have a great effect. Many farmers in northern Thailand have already visited Sangvien's farm; after seeing his integrated farming methods, a large number of them have improved their livelihood by imitating his example.

At the heart of his improved farming methods is an aquaculture system that involves the raising of several types of fish as well as giant freshwater shrimp. In addition, Sangvien grows coconuts, sapodilla, limes, and a relatively small amount of rice on his 30-rai (12-acre) farm. "If I raised only rice, I would get a maximum of 8,000 baht (about US $350) per rai from two crops a year. But my fish ponds alone yield about 30,000 baht (about US $1,300) annually per rai," he said.

A film crew from Thailand's Department of Agricultural Extension recently made a film for television and taped an interview for radio in which Sangvien described his early life and how he developed methods for raising fish and shrimp. "When I was a young man I cleared this piece of land of trees and bushes in order to plant rice," he said. "Although the Phichit area is good for growing rice, adequate rainfall is not always reliable. Because of this I dug a few ponds to hold water during the dry season. Then I began thinking that the ponds could be put to use as wells. I talked to some extension workers about this possibility and they gave me some articles and books to read on the subject. Based on the recommendations I came across, I started by stocking the ponds with carp. Now I make more money from raising this and other types of fish than I do from the rest of the farm, and it is much easier to take care of the fish, too," he added.

Sangvien has become so proficient in his work that he is often called upon by the Department of Agricultural Extension to give lectures at Thailand's premier agricultural school, Kasetsart University in Bangkok. He is also considered an authority on raising giant freshwater shrimp, which command a premium price (almost US $10 per kg) on the market. He recently described these methods at an international conference on shrimp raising that was held at Bangkok. He repeated some of the highlights for radio and television listeners. "My method of raising shrimp involves changing the water in their pond frequently and feeding them a variety of food. Humans would get bored with a single variety of food; so do shrimp no matter how nutritionally complete that food may be," said Sangvien. "The shrimp are cheaper to raise than fish, but they require more attention. Most farmers raising shrimp have trouble with high mortality rates. This could be due to overstocking or lack of fresh water."

* * * *

The film crew followed Sangvien as he described the entire system from beginning to end. "I raise my own fingerlings now, but I used to get them from the river. For the baby shrimp, I travel all the way to Chachoengsao (near Bangkok). The idea of raising shrimp came from the local fisheries officer," he added. Sangvien showed how he cares for the fingerlings, how he feeds the more mature fish and how he replenishes the water in the ponds with supplies pumped from the nearby river. He also explained how he never depends on any single crop, even the fish.

"I have about 10 rai of land devoted to fish; 12 rai planted with fruit trees with rice growing underneath them; and 8 rai devoted to rice. When I started out on this farm, most of my income came from the rice and fruit. By 1979 the revenue from annual crops and fish was about equal. But as of this year, the revenue from fish is exceeding that from rice and fruit. I recommend to all farmers that they do not depend on rice alone; it is too easy for a disease or a pest to seriously damage a crop, not to mention bad weather. Fish farming does not take up much space nor does it take up a lot of time. Ponds can usually be dug at low cost. I was able to get my ponds dug for free by exchanging the soil in them for the service of excavating them. A building contractor came in with a bulldozer and trucked away a lot of soil for use as fill; the ponds are between 1½ and 3 metres deep. Both the contractor and I benefitted."

* * * *

Sangvien gladly hosts visits to his farm by farmers and other agriculturists from all over Thailand. "My methods are not secret," he said. "Other farmers can do the same as I have done. In fact, since I started using integrated farming methods, more than 100 other farmers in this province have used my methods to raise fish. Many of them still visit me asking for advice and for discussing new ideas. In addition to the fish, I tell them about the early yielding variety of coconuts on the farm; these are not widely planted yet elsewhere in Thailand, but they bear fruit after four years and yield a good income.

"There are many ways farmers can improve their yields and the amount of money

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Development Communication Report

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UNISPACE Teleconference Links Experts in Discussion of Development Communication

One exciting feature of the recent UNISPACE 82 Conference in Vienna, Austria, was the series of live interactive teleconferences coordinated by the AID Rural Satellite Program's Sandra Lauffer. Ms. Lauffer, the former editor of DCR, *structured one of these teleconferences around the theme of development communication and the role of communication satellites. We are pleased to present the transcript here, and hope to print selections from the transcripts of subsequent teleconferences in future issues of* DCR.

Participants in the August 12, 1982, audio teleconference included Wilbur Schramm speaking from Hawaii and Robert Morgan from Florida, as well as UNISPACE Secretary-general Yash Pal and several UNISPACE delegates in Vienna. The moderator in the United States was Dennis Foote, who coordinated the teleconference from the conference center at the Academy for Educational Development in Washington, D.C.

Introduction of Guest Speakers by Dennis Foote: Our first speaker is Dr. Wilbur Schramm, Director Emeritus of the East-West Communication Institute in Honolulu, Hawaii.

Wilbur has been active in the entire field of development communication. Not only did he launch some of the earliest notions of using communication for development, but he was also involved in some of the earliest studies on using communication satellites specifically for development.

Our second speaker is Professor Robert Morgan, Director of the Learning Systems Institute at the Florida State University in Tallahassee. Dr. Morgan also has a long history of involvement in the issue of applying the techniques and technologies of communication to development.

At this time I'd like to turn the floor over to Wilbur for a few remarks about his views on the role of communication technology in development.

Dr. Wilbur Schramm: Thank you, Dennis. To the rest of you, the time-honored greeting from this part of the world, Aloha from Hawaii.

I would like to talk about five minutes, on what stays with me, that might interest you, from a talk we had here in recent days with scientists and educators about the use of communication satellites within the Pacific. Some of us are greatly interested in what the University of the South Pacific (USP) is doing with the radio satellite to teach university classes on *nine* Pacific islands, some more than 2,000 miles away. They are using the ancient ATS-1 satellite which is now 14 years old and should have been long dead. But it still manages to lay down a signal from the coast of Asia to the coast of America and from Micronesia to New Zealand. USP feels that satellite time is too precious to use for lectures and therefore puts the lectures on paper and uses the electronic circuit almost totally for tutorials. It's one of the few systems in the world that I know that does this. It's a remarkable experience to hear a teacher in Fiji preside over four student groups, on four islands, representing four cultures, and lead them through a discussion of educational methods, land tenure, or economic planning. He responds to an opinion, let's say from Western Samoa; asks a student from Kiribati what he thinks of the idea; and inquires whether Tonga has any experience with the same problems, and so forth. He has to keep comments short, but on the whole the impression is very pleasant of people sharing knowledge and ideas. And after class there is likely to be an announcement that two of the island groups, say Samoa and Tonga, will meet together next week, by satellite of course, to go further into the topic.

Now, what USP has accomplished is important for a number of reasons, I think. For one thing, it shows that a satellite educational system need not necessarily be elaborate and costly. ATS-1 is bargain-basement; the

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A Letter to Readers

As many *DCR* readers already know, the Clearinghouse on Development Communication and this newsletter are funded by the Bureau for Science and Technology within the Office of Education at AID. Because of a broad range of budget cuts in U.S. Government programs, more and more projects are having to absorb reductions in their funding. Like others, the Clearinghouse has been affected by the cutbacks. One probable result of the budget paring will be that we will not continue to send *DCR* by air mail to our subscribers in the developing world.

I urge subscribers to write to us at the Clearinghouse to let us know how they will be affected by this probable cut in service. If receiving *DCR* by air is important to you, and if the newsletter continues to be a valuable professional resource for you, it would be helpful for us, in seeking additional funding, to know that. Letters we receive will help us to document the needs of our subscribers and the usefulness of the services we provide, particularly to the developing world.

We look forward to hearing from you.

Heddy F. Reid, Editor

In this issue . . .

A publication of the Clearinghouse on Development Communication
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ground equipment is low-cost and simple, easy to operate and maintain. In the second place, it illustrates how two-way communication can be worked into even a very extensive teaching system. Third, it proves again that the electronic channel is as good for teaching as what it carries. An excellent tutorial teacher gets excellent results. When the situation is otherwise, the results are otherwise. Fourth, it illustrates the potency of distance education which, as we all know, is one of the strongest currents now pulling in education. I mean the use of modern communication to bring the school to students who can't themselves come to the school. Some of us believe that within fifteen years, perhaps half of all instruction at college level or above will be given at a distance. Higher education is now so costly that more and more students will have to combine work with at least half their university studies.

Furthermore, knowledge and technology are growing so fast that the average college graduate is likely to acquire at least one additional year of university study for every five years after he graduates, or risk falling hopelessly behind the state-of-the-art. The most important thing the USP experience brings to us, however, is that we must prepare to answer certain large questions about the process. How can we make distance teaching effective for small groups and large totals? What can we teach best and least well with it? How can we train teachers for it? You can train them to write materials, of course, or mark papers, but how do they learn to conduct a satellite tutorial, especially at a great distance and perhaps across cultures; and finally, how can we use this potential and promising tool in such a way as to do not merely a big job but also a truly high quality job?

Thank you and good evening!

Question from Vienna from Dr. Ali Al-Mashat, Director-General, ARABSAT: Given what you know, and your experience since 1955, would you rather start along the elementary level of education with satellite applications or at some other level?

Wilbur Schramm: I think I would start with what a country needs. This is one principle which I might change from the 1946 book that we talked about. There are many Latin American countries which have needed things like the ACPO project which are for the elementary level; things like the Brazil projects which are for the elementary and secondary level. On the other hand, I think the more advanced countries will be much more likely to need the college-level work, and in a place like the South Pacific, you see, one of their great problems is that they have no colleges; they have about three colleges in the whole Pacific, and the question is how do they get college work out there? How do they get advanced work? How do teachers take some of the additional courses that they need? How do government servants take advanced economics or economic planning courses, or even accounting? I think it depends wholly on what the country needs as for what we can do best, and also on what we know most about. I think now we know more about university teaching than about elementary teaching.

Question from UNISPACE Secretary-General Yash Pal in Vienna: Wilbur, we haven't seen each other in a long time and it's wonderful to hear your voice.

One of the things which has been bothering me more and more is that probably soon we will have the possibility of universally expanding the reach of communication. That solves a technical problem, but seems to create many new challenges. I think we don't quite know how to fully exploit the long reach and create a large satellite neighborhood for learning. Maybe you've done some more thinking on this; would you like to say something?

Wilbur Schramm: Well, I'd like to say something, but I must admit that I can't give you a sharp answer because I don't have a sharp thought on it. I think you are absolutely right. This is one of the most serious problems, to arrange the size of the coverage, to arrange the kind of teaching that it is going to be. In this country we have been talking a great deal about the fact that colleges, universities, may turn out to be quite different from what they are now, in that certain ones will offer certain, specially good, specially distinguished courses in certain topics, and so instead of people going to Harvard for four years, they may take one very good course from a Yale source, and one very good course from the University of California, and we may find ourselves putting together college programs of that kind. It's a bold new world, this completely new world of educational planning, and I wish I were young enough to think I could spend twenty-five years working on it.

Yash Pal: I agree with you on that. I think this is probably what one should start with and can do much more effectively than many of the other things. Of course, you are young enough to work for another twenty-five years and I would love to work with you.

Wilbur Schramm: Well, I'd love to work with you, but don't count on twenty-five years. At this hour of 2:45 or something like that, 2:55 in the morning here, I begin to feel a bit like an old man.

* * * * * * *

Dennis Foote: Can we come in at this point and see whether or not it's possible to go forward with Dr. Morgan's presentation and then open the questions back up again?

Robert Morgan: I hate to interrupt because the questions were interesting and I'm enjoying Wilbur's responses to them, particularly. I might certainly agree with the problems that Dr. Schramm has raised here. On the one hand, we've had ten, twelve, thirteen years of research on applications of the satellite to expanding telecommunications operations, starting back with ATS-1 in Alaska, I suppose, and ending with the ATS-6 experiments with project SITE In India. And the audience, the group that is teleconferencing with us today, is a sophisticated and knowledgeable group. There's no point in reviewing that: we know that the satellite can do some things that can't be done cost effectively or can't be done at all by other means. So on the one hand we know the satellite is a powerful potential tool. On the other side of it, let me comment again on some of the things that Wilbur mentioned. We know that telecommunications in human resources development is a powerful tool. We have begun to collect empirical data, not just professional judgements, that this tool is having an effect on the competency levels of individuals and on the skills that they have, and indeed ultimately on their condition of living.

Wilbur mentioned the South American radio-based non-formal education program in Colombia, ACPO. A comprehensive evaluation of that program has indicated that the training, via the radio, supported by simple print material, has had a measurable effect on the way the rural farm families of Colombia, by the thousands, live. It takes a very large communications infrastructure and a very large support staff to provide that kind of telecommunications training program . . .

(Dr. Morgan had to be interrupted because the conference plenary session was beginning in Vienna. Sandra Lauffer thanked Dr. Schramm and Dr. Morgan and apologized for signing Vienna off.)

Robert Morgan: Wilbur, it's been good talking with you.

Wilbur Schramm: Bob, it's good to talk to you. If we had time I'd like to say some words about what you said at the end. We have now, just coming out of the computers, the post-survey from the Palapa business down in Indonesia. You know there was a pre-survey five years ago. A control group and an experimental group were surveyed, and now Indonesia has gone back to the same people. And we are going to have a quite remarkable result, I think, about what television through satellite does for villagers.

Robert Morgan: So we'll look forward to seeing that when it comes out.

Wilbur Schramm: This is going to be terribly interesting. ■

New Production Center in Lesotho Developing Materials for Learning

Orville Joyner

I am associated with the Instructional Materials Resource Centre (IMRC) Project in Maseru, Lesotho, one of two major curriculum development projects in the Ministry of Education. This Project is supported by AID, and the other, the National Curriculum Development Centre (NCDC), is supported primarily by the World Bank, but does enjoy the support of other donors. The IMRC was created to develop, produce, and test instructional materials which would eventually be used on a mass basis in support of the NCDC-designed syllabi in the nation's schools.

The literacy rate in Lesotho is said to be comparatively high, but this has been achieved in spite of critical shortages of adequate schools, trained teachers, and instructional materials of all kinds. Lesotho's geography is not conducive to easy improvement of these conditions, but a beginning is being made.

Teachers to Introduce Materials

In the 1980s, the Ministry of Education created, with donor assistance, three new units designed to work together to achieve curriculum reform and improved formal education. The first was the National Teacher Training College (NTTC), which took over all teacher training functions formerly carried out by church-operated institutions. Its student body numbers about 900 pre-service trainees and about 400 in-service students. Usually 300 of the pre-service students are away from the central campus in Maseru (the capital), spending the second year of their three-year program in internship teaching. The in-service teachers come to campus twice a year for intensive one-month courses between regular school terms. It is primarily through these two groups of teachers that newly developed materials can be introduced to the schools.

To be effective, this system of curriculum reform and introduction requires that the National Teacher Training College reflect national curriculum policy and that appropriate instructional materials exist or be created. These two major tasks, i.e., formulation of curriculum policy and content, and the development of the required instructional materials, were assigned to the National Curriculum Development Centre (NCDC) and the Instructional Materials Resource Centre (IMRC). While supervisory committees have been established to oversee the coordination of the these tasks, and Ministry of Education officials retain the right of final approval, it is these three new units that are working on the general task of improving the educational system and output of Lesotho's schools. The remainder of this paper deals primarily with the Instructional Materials Resource Centre because it is concerned with communication media used to transmit messages developed elsewhere in the system.

Well-equipped New Building

The IMRC has recently moved into a new building which, when finally equipped and furnished, will be able to produce prototype print and non-print materials. The range of media includes offset printing, silk-screen printing, still- and motion-picture photography, audio and TV production, wall charts and transparencies. Equipment includes photo-composition terminals, printers and memory, printing and bindery equipment, ¾" video equipment, Super-8 film equipment, etc., and adequate space in the building to house and/or use the equipment. The staff will eventually number about 25, and the building, including studios, storage, office and work space for printers, artists, composer-operators, AV technicians and professional curriculum materials developers, is about 1,000 square meters. Everything we do has to do with communication, but we tend to think of ourselves as a development resource first.

Graphics Capabilities

Essentially, the role of the Materials Centre is to develop materials on a prototype basis, produce them, distribute them, assist in their use and implementation, and, finally, to evaluate their effectiveness before modification or adoption for mass production and distribution to all schools. To accomplish these tasks, the IMRC has staff and advisors in offset printing, photocomposition and word processing, silk-screen printing, graphic art, administration, photography, TV, audio, motion pictures, and instructional design. The instructional design function embraces materials development, editing, and evaluation.

At this stage of the project, not all of Lesotho's curriculum development objectives are always being met in a timely fashion. None of the three new units is yet able to function as effectively as is desired. Management skills are new to many government offices. Planning data are not always available. Roads may not always exist and if they do, there may be no bridges across the rivers. The rural areas are not usually supplied with electricity or telephones. It would be simple to blame slow progress on the absence of physical infrastructure, but that would be too easy. The bureaucratic infrastructure of the technological, Westernized societies involved in these three projects has also been inadequate to the need. Donor agency conflicts have sometimes occurred, but in most cases the problems have been resolved amicably. It is fair to say that many times a decision delayed was a decision better not made at all, and a better one came along when the time was right.

One of the important features of the Instructional Materials Resource Centre is its orientation to service. Within limits imposed by government regulations and decisions, the IMRC has endeavored to provide a wide range of media services. Booklets, handouts, and exams are regularly printed for the National Teacher Training College. Syllabi and teachers' guides are printed for the National Curriculum Development Centre. Many reports and papers for the Ministry of Education have been produced by the IMRC. Micro-teaching, which uses video, was already a part of the NTTC curriculum, so TV has not represented a real innovation, but several locally produced videotapes made with basic equipment have revealed the enthusiasm with which video will be received when the new production equipment is in place. A demonstration film on teaching English produced by the IMRC has been popular. Another film, still in the editing stage, depicts village life.

Silk Screen Maps Very Popular

One early project undertaken by IMRC was the development of a series of instructional wall charts, reproduced by silk-screen. A series of maps, including one of Lesotho, one of Africa, and one of the world has been the most popular. Other subject areas for which charts have been developed include language, health, social studies, and math. No single undertaking of the IMRC has proved as popular with teachers in rural Lesotho as these charts, especially the maps.

The instructional design section of the Instructional Materials Resource Centre is charged with developing new materials in cooperation with appropriate content area specialists in the Teacher Training College and/or the Curriculum Development Centre. Sometimes when we see a need or something is suggested to us, we take the initiative in the first stages of development, involving others as we discover the need for assistance. This section gives the IMRC an added dimension of service, providing a much-needed link between the writers of materials and the people involved in the production process.

Instructional designers should, in fact, assist in the process of media selection, and with the full range of media choices soon to be available to Lesotho's Instructional Materials Resource Centre, this collaboration will become a reality.

Finally, under the heading of "lessons learned," we have found that before we could begin to develop materials, we had to undertake activities that would build trust

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and understanding, and faith in our willingness and ability to keep production promises (something we still occasionally fail at). We have to nurture the parts of the curriculum development system that must function smoothly together. This last can be a difficult task, especially given some of the management problems mentioned earlier. It is a task not finished yet and one that will always be incomplete. It is however, a task that must not be ignored if cooperation in the use of communication media in curriculum development is to be ensured. ■

Orville Joyner is currently Instructional Design Advisor to the IMRC in Lesotho. He is associate professor in Instructional Technology at Southern Illinois University/Edwardsville, and has done media and instructional design consulting in Latin America.

Culture and Communication

The Fifth International Conference on Culture and Communication is calling for papers for its March 24, 25, and 26, 1983 meeting at the Bellevue Stratford Hotel, Philadelphia. The Conference invites presentations relevant to the following topics: Communication Theory; Research Methodology and Philosophy of Social Science; Interpersonal Interaction; Government, Industry, and Culture; Communication and Ideology; Mass Media and Acculturation; and Art as Cultural Artifact.

Deadline for proposals is Nov. 1, 1982.

For appropriate forms and/or further information: Dr. Sari Thomas, Department of Radio-TV-Film, Temple University, Philadelphia, PA 19122, USA.

Water Directory Seeking Listings

The International Reference Centre for Community Water Supply and Sanitation (IRC) and the USAID Water and Sanitation for Health Project (WASH) are compiling a directory of organizations involved in community participation and education related to water supply and sanitation. The directory is designed to list organizations active in the *social* and *educational* aspects of *water supply* and *sanitation* (e.g. development and implementation of community participation strategies, preparation of educational programs and materials on water and hygiene, or social research), to facilitate exchange of information and experiences, and to identify organizations capable of providing special services.

If you think that participation in this directory would be helpful to your organization and other similar agencies, please contact: IRC, P.O. Box 5500, 2280 HM Rijswijk, The Netherlands, or WASH, 1611 N. Kent Street, #1002, Arlington, Virginia 22209, USA.

The Arthur Clarke Centre:

A Technological Platform for the Development of Rural Communication

by Naren Chitty

The Sri Lanka Centre for the Study of Communication, Energy and Space Technologies (also known as the Arthur Clarke Centre or ACC) is being designed to meet a critical need for training, research, and adaptation of technology in developing countries in order that the massive rural sectors of these societies may derive optimum benefit from the awesome educational and informational promise of satellite and computer technology.

Modern communication technology, or "talknology" as I shall call it in the interest of brevity, has the potential to reach out, touch, and transform the lives and livelihoods of billions of the world's rural dwellers in Asia, Africa, and Latin America. Speaking of USAID's Rural Satellite Program, the Academy for Educational Development (AED) has stated that "central to the Rural Satellite Program is the premise that modern communication technology, when carefully planned and systematically applied, constitutes an appropriate tool for achieving fundamental development objectives. During the past two decades, satellite and related technologies have become indispensable to the daily functions of the developed world. The Program will encourage the use of existing satellites to provide vital domestic communications for many rural areas in the developing world."[1]

Roadblocks to Development

The fundamental development objective of developing societies may be summarized as the creation of an economically sound, physically healthy, educated nation. Education is both a major goal of development and a means of achieving a higher state of development. Education is expensive. In 1977 approximately 75 countries invested 10 percent and over of their total expenditure on education. Four countries spent over 25 percent, and an equal number spent less than five percent.[2] Shortage of trained personnel, the expense of training adequate numbers of personnel, and the sheer enormity and diffusion of the target groups have made mass media necessary in widening the reach of regular educational and extension systems.

In their present form, however, newspapers need vehicular transport for distribution, effective telephone networks presume that most people are plugged in, and TV generally requires rural electrification. These delivery and power systems are expensive to install, and the experience of developing countries has been that the resultant slow expansion of such systems has impeded the use of communication media for educational purposes.

Arthur Clarke has suggested that by being late-comers to the world of talknology, developing countries may find it "unnecessary to build the elaborate and expensive ground systems required in the past."[3] Indeed, he has advocated that developing countries should skip over the preliminaries and plunge straight into satellite-based systems. In his book *The World Challenge,* Jean-Jacques Servan-Schreiber suggests that developing countries can leapfrog into the post-industrial age. But unless Third World countries are able to develop the necessary skills and knowledge-base, their own technological platform, catching up could turn into technological Blind Man's Bluff. At the same time, talknology offers some very real shortcuts which provide ways around serious development roadblocks.

Need for Technological Platform

Clarke has pointed that "unless major investments are made in space, millions going to die, or eke out brief and miserable lives. And most of those millions will be in the Third World."[4] If the technological harvest from the investment in space does not trickle down to developing countries, or if developing countries do not have the capacity to absorb talknology and adapt it to their individual requirements and constraints, Arthur Clarke's prognosis may still come true.

"Shortage of trained personnel is the primary factor limiting the ability of developing countries to assimilate technology. There is need for programs to inform policymakers, planners, and resource managers of the potentials of the technology; for short-term, in-depth training of scientists and resource specialists to enable them to analyze satellite data applicable to their resource sectors; and for longer-term academic training for those who will be involved with its technically more demanding aspects."[5] This remark, made at the National Academy of Sciences about resource sensing from space, is applicable to all areas of talknology.

The Arthur Clarke Centre is being designed primarily to provide developing countries a facility for the training of personnel in advanced areas of computer and telecommunication technology, applied research directed toward the development of low-cost communication hardware powered by freely available, cheap energy, and to engage in policy studies.

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Radio Listening Groups: Some Problems and Some Suggestions for Facilitators

by Esta de Fossard

Many countries of the developing world are interested in using radio listening groups (RLGs) as a means of educating rural citizens and encouraging them to actions that could improve their standard of living. A radio listening group is usually formed by a group of villagers with a common interest—farmers, women with young children, cooperative members. They meet together at regular intervals to listen to a radio program relevant to their common interest, and then a facilitator leads the group in a discussion of the program and in the formulation of local action.

In this article, we will examine some of the problems of radio listening groups, and some suggestions for making the groups and the facilitators more effective.

Problems of Radio Listening Groups

The main problems with radio listening groups fall into three areas: structural problems, content problems, and facilitator problems. The most common *structural* problem is that facilitators find it impossible to keep an active listening group going over an extended period of time. This may be due to any or all of the following:

- other essential activities in which group participants are engaged on a seasonal basis;
- the burden of regular attendance;
- boredom with the programs and the discussion format.

The problem can be largely overcome by organizing listening groups on a short-term basis around a particular theme; in effect, the organization of a campaign. In this system, the RLG facilitators would spend some of their time working together with radio program planners and producers to plan and create the campaign and its programs. The rest of their time would be spent in the field facilitating the use of these programs with their listening groups.

There are obvious advantages to this system, because it allows the RLG facilitators to be involved in the planning of the overall campaign and of the individual radio programs. They can contribute ideas from what they have learned first-hand about audience needs and preferences. They can be fully aware of the program content ahead of time. They can see to it that the radio programs are designed in a way that makes them both practical and interesting. By spending some of their time on the planning of radio programs, the facilitators will gain a feeling of personal involvement with the programs, and this should certainly enhance their interest in using the programs with their listening groups.

One of the major *content* problems with programs devised for instruction and information is that all too frequently the content does not adequately reflect the needs and interests of the audience. Moreover, where the programs must be put together by ministry or department personnel rather than by radio experts, the programs can become overly didactic and uninteresting.

Involving the Audience

One of the golden rules of successful radio broadcasting is to *involve the audience* in the program. It is helpful, therefore, if the RLG facilitators will accept the responsibility of observing and recording the particular needs and preferences of their audience and reporting these to the program producers.

Another frequent problem with RLGs is program repetition. Even when a ministry or department has an allocated space once a week on local radio, it is difficult to come up with a new program every week, and program planners sometimes "fill the gap" by repeating an earlier program. This can be frustrating for RLG participants who would prefer to be dealing with a new topic each week rather than rehearing an old one.

Producing quality radio programs on a regular basis is a demanding and time-consuming job, requiring the expertise of a number of people—script writers, producers, actors, radio technicians, and content specialists. It would seem, therefore, that running a time-limited campaign for listening group use would relieve some of the burden that falls on program developers, and give them a better chance of producing interesting programs that stimulate useful discussion and action. Having the RLG facilitators present at the planning of such a campaign can only enhance its chances of success.

Facilitators' Problems

Their own lack of training and experience is often the biggest problem facing RLG facilitators. Many of them have to take on RLG responsibilities in addition to their other department duties, and the majority of them are expected to conduct the groups with little or no previous training. Too, they often lack necessary equipment, and prior knowledge of program content and objectives.

Some of these problems are addressed by altering the structure to a campaign format as suggested above, and by improving program content with input from the audience and added training for program developers. Other problems can be overcome only by giving facilitators specific and sufficient training and by allowing them continued practice under the guidance of a trained supervisor.

It is helpful to organize regular meetings where facilitators can get together and discuss their problems and successes with their peers. It might also be advisable to have a short "brush-up" workshop each time the group meets to plan a new campaign.

Many successful RLG facilitators have worked out their own ways of getting participants to assemble in plenty of time for the radio program. Their suggestions include:

- Setting up posters and other visual materials ahead of time as a "come on" for the audience;
- Being prepared to record the program for playback at a later time if unforeseen circumstances make it impossible for the group to assemble on time;
- Playing some recorded music that is particularly appealing to the audience (on cassette) for 10 to 15 minutes before the program is due to start, to attract the audience.

Defining Objectives

There are certain points RLG facilitators should always keep in mind. Before you begin the work of facilitating a listening group, you should have a clear understanding of three sets of objectives:

1. The objectives of the organization running the "campaign." If the organization is a women's committee, for example, you should have a clear understanding of the objectives of that committee. If the group is a farmers' cooperative, their main objective might be "to help cooperative members improve their social and economic standards."
2. The overall objectives of radio listening groups, which might be stated: "To enable listeners to have a better understanding of subjects relevant to the goals of the organizing group, and to stimulate local actions that can arise through discussion of the radio program."
3. The objectives of any particular listening group session, which could be stated thus:
   a. To enable participants to listen attentively and develop a common understanding of what has been presented in the radio program;
   b. To plan and carry out immediate action where necessary and possible;
   c. To provide feedback to program planners and producers.

Facilitators may find it easier to run successful radio listening groups if they follow some of the following points or guidelines for running a radio listening group:

1. Know the topic of the program.

It is very difficult to prepare a successful listening group discussion if you do not know the program topic ahead of time. If facilitators are involved in the planning of a campaign and its individual programs, it is much easier for them to be prepared for any par-

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Training on Location:
Communication Workshops Spread the Message

by Bella Mody

What makes a good training program? Is it a learning experience that involves project beneficiaries as equals, as Paulo Freire advocates? Can effective training be conducted in classrooms and antiseptic laboratories? Does a good training program involve the latest hardware, the most modern programming, and world-class professionals? Do regional and cultural conditions vary significantly and affect the training content to the extent that it is essential to have a distinctly local curriculum, trainers who know local conditions, and a regional venue? The answer to all these questions is "it depends."

What are the strengths and limitations of First World country training for Third World country media practitioners? Under what conditions is a trip to a training site in London or New York a worthwhile reward for a hard-worked government bureaucrat, irrespective of the local applicability of the training content? Would relevant national or regional training be more useful and more economical, but less prestigious? Would training selected teachers who could then hone and train several others be more cost-effective than travel? These are some questions that the following article addresses.

The Education Office of the Development Support Bureau (now the Bureau for Science and Technology) of the United States Agency for International Development's Policy and Training Project (AIDPAT) contracted with the Institute for Communication Research at Stanford University to organize the first of its three United States-based short training workshops in development communication for mid-career professionals from Third World countries. Directed by Bella Mody, Everett M. Rogers, and Doug Solomon, the Workshop was run at Stanford, California, from August 14 to September 1, 1979.

International Participants

Participants came from El Salvador, Costa Rica, Liberia, Trinidad, Mexico, Tanzania, Jamaica, Pakistan, India, France, Botswana, Egypt, Zambia, Jordan, Nepal, Colombia, and Barbados. Eighteen participants were supported by U.S. government agencies, three were supported by their own governments, six were supported by U.N. agencies, and two supported themselves. Visiting lecturers who contributed their time include Edward Palmer of the New York Children's TV Workshop, David Sprague, Acting Director, Office of Education, Bureau for Science and Technology, Agency for International Development, Glen Hildbran of the American Cancer Society, and Kim Potts of the British Council, England.

The purpose of the Workshop was to provide Third World development communication TV producers, radio producers, graphic artists, extension agents, and educators with exposure to a range of low-cost, do-it-yourself research methods for the systematic design of materials in support of projects in agriculture, animal husbandry, health, nutrition, family planning, and formal education.

Objectives for Participants

After they had attended the Workshop, it was expected that participants would be able to undertake the following systematic steps in message design in their own projects at home:

a. analyse the root causes of the agriculture, animal husbandry, health, family planning, or formal education problem they were working on, rather than dealing only with the symptoms;
b. assess the education and communication needs of the project's beneficiary population through focused in-depth interviews;
c. define and describe the life-style and world view of the beneficiary population in words and pictures;
d. establish entry-level knowledge, attitude, and behavior levels for the beneficiary population groups;
e. generate alternative message strategies through small message formation research studies;
f. pretest draft messages in rough form;
g. design and operate a feedback system on message impact to enable continuous message improvement.

Course Organization

The course was divided into three content units. The first part of the course was an "establishment shot": it dealt with the literature on the communication process, the nature of words and pictures as the message-designer's tools, the causes of underdevelopment, the role of communication in supporting development activity, the range of big and small media available in Third World countries, and with research findings on the effects of different media on learning, attitude change, and behavior change.

The second part of the course focused on the basic systematic "spirit" of message design and the "how-to" steps in formative evaluation. Exercises included preparing a beneficiary profile, conducting needs assessment studies, writing behavioral objectives, preparing a scriptwriter's handbook, establishing entry levels for knowledge, attitude, and practice, and using message formation techniques such as interviews, observation, attitude scales, word association tests, and sentence/story completions.

The third part of the course focused on the design of messages: drafting, pretesting; message discussion by groups at the point of reception; message coordination with the supply and availability of development inputs and infrastructure; the design and operation of feedback systems on message impact and utilization; and approaches to introducing the preceeding systematic steps in message design into the participants' own development communication departments/institutions.

Most faculty members distributed instructional materials to facilitate analysis, discussion, and recall of the subject under study. Major handouts were chapter drafts by Rogers and Solomon from their forthcoming handbooks on message design. A reading packet consisting of basic texts was provided to each participant. Videotapes on communication projects in the Philippines, Guatemala, Pakistan, Nicaragua, India, the Ivory Coast, and the United States were presented. After-dinner films featured Third World film makers such as Haile Gerima from Ethiopia, Pereira dos Santos from Brazil, Humberto Solas from Cuba, and Ousmane Sembene from Senegal.

Lectures and Problem Solving

The course format included participants' presentations of their work experiences; lectures; handouts; discussions; individual and group problem-solving tasks; role-playing; case study presentations; and the screening of videotapes and films.

The first morning was completely reserved for participants' presentations on their professional backgrounds and project descriptions. A basic core of lectures on the state-of-the-art of development support communication and the range of research methods available ran throughout the seminar. Discussions were held on topics such as the obstacles to communication and the causes of underdevelopment. Problem-solving assignments included the design of a logo for a Workshop brochure, and the design of a brochure itself. Role-playing was used to help in learning pretesting procedures.

At the end of the program, the question was asked: How can such a training program be improved? The formal pre- and post-evaluation by participants came up with the following suggestions: design courses at national and/or regional levels in collaboration with Third World faculty so a transfer of skills takes place at both faculty and practitioner levels; teach formative evaluation methods in the field rather than through role-playing in a U.S. classroom; invite Third World formative evaluators to present their own cases in person; select homogeneous groups of participants who share use of a particular medium or a particular development area (e.g., animal husbandry); do not accept participants who cannot follow the

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Kenya's New Literacy Program

by Judy Brace

In Kenya in 1978, a Presidential declaration set forth the goal of universal literacy by the end of 1983. Moving from the political idea, through lengthy issues of budgetary appropriations and recruitment of personnel, to preparation of materials, the program began in January 1982. Following on the long experience it had accumulated in its program of distance teaching to upgrade primary school teachers, the Kenya Institute of Adult Studies developed, at the request of the Ministry of Culture and Social Services, a distance teaching program to train the literacy teachers even as they began their teaching assignments. The program combines print materials and a daily radio program that covers eight subject areas dealing with the specifics of teaching adults.

Three thousand teachers were recruited for the literacy program, most of whom had been trained as primary school teachers. Teaching and training began simultaneously in January, and will continue hand-in-hand to the end of 1983. Among the subject areas of the training are Methods of Teaching Adults, Human Relations and Communication, Psychology of Adult Learning, Policy and Philosophy of Adult Education, Adult Education and Development, Curriculum Planning and Administration, and Effective Evaluation. The end purpose is to enable the trainees to teach more than literacy: they will be able to transmit an understanding of how people can shape their lives through their own actions.

Over the two-year period of the program, teacher/trainees have a monthly assignment to complete and mail to the Institute for correction and comments. Assignments are received and reviewed by a part-time staff that has the corrected assignment on its way back to the teacher/trainee within 72 hours. These written assignments provide some limited feedback and the possibility to make changes in the next printing of the work materials.

The radio component of the training is used to pace the teacher/trainees, serving to provide them with motivation, explanation, and reinforcement in their studies. With the cooperation of the Voice of Kenya (VOK), three subject area programs of 15 minutes are broadcast daily in Swahili on the national service station, from 5:00 p.m. to 5:45—prime listening time. An alternative broadcast time has been provided by VOK from 12:30 to 1:00 p.m. every weekday. A survey conducted by the VOK has found that the audience far exceeds the actual 3000 teacher/trainees who are the target audience, and includes a total of 500,000 Kenyans. The time slot used was the one normally used by the Institute of Adult Studies as part of their correspondence course for teacher upgrading, donated in support of the national literacy program. The Institute is now negotiating with the VOK for additional time to accommodate both programs. There is talk of establishing a national educational radio station, but this would have the drawback of not reaching the broad audience that currently tunes into educational information as part of their daily listening pattern.

The budget for this first year of the program was approximately US $600,000, and it is exclusively for the training and administrative needs of the Ministry personnel—teachers and adminstrative officers. The Institute held an initial six-week residential training session at its campus in Kikuyu for one administrative officer from each provincial, district, and divisional office of the Ministry throughout the country, to assist them in the management of the program. Materials were developed and printed only in quantities sufficient for the 3,000 Ministry teachers.

In the second year, the program will be expanded to include an additional 5,000 volunteer teachers from non-governmental community service organizations, bringing the total number of teachers to be trained as they teach up to 8,000. This will require both an increase in materials printed, and in correctors needed. Additionally, materials to support the newly literate will be being produced in cooperation with the Institute of Adult Studies and a number of government ministries and departments.

It is anticipated that the literacy program will be continued as part of each subsequent national five-year plan, and that the government's commitment to distance teaching by both correspondence and radio will continue to be strong.

For further information on the program, contact Peter Kinyanjui, Director of Adult Studies, University of Nairobi, P.O. Box 30197, Nairobi, Kenya. ■

Judy Brace is the Assistant Director and Resource Center Manager at the Clearinghouse. She visited communications practitioners and projects in Kenya in April 1982.

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dio—which is reserved for listening to the news—in that they can be played several times. Therefore, the message is remembered better. To take advantage of this, a series of cassettes of traditional songs and tales by story-tellers and singers who are well known in the region was produced. The clever idea was to devote a part of each side to new ideas for development, which were presented in the form of a song by the local singers. The cassettes are sold through local stores in many large villages. The series is well liked and the cassettes sell well.

In order to cover the whole area of the project, it is planned to produce cassettes in the nine main languages.

Slide Set With Commentary: A series of 70 slides which explains the breeding of the tilapia fish has been tested and found useful. The extension workers will translate the commentary into the various languages of the region. Although the slide set is good for communicating in detail specific techniques, its use in rural area is limited because of lack of power supply. This type of material is therefore more suitable for sensitization and training in fully equipped training centres. To support the activities of the staff, the project plans to equip each district with a battery-powered projector.

Flannelgraphs: The flannelgraphs developed for the project contain 27 adhesive sheets which show all the people, animals, and equipment involved in pisciculture. The trainee extension worker learns during his course how to cut out the objects from the sheets, to color them and to arrange them to make up stories to explain the various stages of fish farming to different audiences—pupils, parents, women.

The flannelgraph has the advantage of being the cheapest, the most flexible, durable, and the lightest audiovisual aid. With this material it is also possible to test the knowledge acquired by the audience. It is considered the best method of participatory learning.

Booklet: Although existing booklets on pisciculture were used to train extension workers and fish farmers, a special version for the Ivory Coast has proved necessary. The reason for this is that ground conditions vary slightly, which means using other techniques. This booklet is written in the form of a course. The lessons are illustrated with technical and explanatory drawings. The booklet can be used as a pisciculture guide or manual for everyone who understands French.

View Master: This is relatively little known as a teaching aid, but it is highly valued, as tests have proven. It consists of slides taken with a special stereoscopic camera. These are then mounted on circular boards like small discs with a commentary. The discs can be viewed with a simple viewer, especially designed to give the impression of three-dimensional images.

The view master is particularly suitable for individual use. The card can of course be viewed as many times as desired. It is like a toy, and those who use it have great fun.

All the teaching materials can be used for nonformal as well as formal education. The materials are equally well understood by pupils and adults who practice pisciculture, as shown at the school in Natiokobadara. Learning can be fun if it is practical. Furthermore, productive work motivates and stimulates people. ■

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A Communicator's Checklist

1 ***The Coming Information Age: An Overview of Technology, Economics, and Politics,*** by Wilson P. Dizard, Jr. (Annenberg/Longman Communication Books, New York, 1982), 213 pp.

The Coming Information Age is an interesting and readable analysis of the past, present, and future of information technologies. The central concern of the book is the need to formulate policies that will gently guide the spread of the new technologies, minimizing the dangers and maximizing the public services that they will provide.

The book identifies three general approaches to the formulation of policy: (1) an essentially *laissez-faire* approach that leaves the development of new services to competition in the private sector, (2) a centrally directed social engineering approach in which government controls the development of new services, and (3) an intermediate approach in which government and private sector institutions jointly formulate general policy guidelines that direct the nature of new services. The development of telecommunications services in the United States represents the *laissez-faire* approach; telecommunications in the socialist countries represent the centrally directed approach. Both approaches have some inherent inefficiencies, and neither serves the public interest as effectively as does the mixed public-private approach, at least in the case of the United States, according to Dizard.

The book concentrates on the development of telecommunications technologies, services, institutions, and policy in the United States, but the implications of the U.S. experience for other countries are one important theme of the book. To some extent, the U.S. experience provides a useful example of how *not* to develop telecommunications services. The book discusses U.S. telecommunications in a way that should be understandable and useful to telecommunications policymakers outside of the United States. In addition, some specific international topics—the export of U.S. communication technologies; international imbalances in access to information; and the history of international communication institutions such as the ITU, INTELSAT, and UNESCO—are reviewed.

Briefly, the book has the following chapters:

1. "The Information Age" realistically discusses the promise of information machines, without too much lofty prose about what might be possible in a utopian future.
2. "The American Stake" reviews the development of mass media and telephone services in the United States, and argues that the U.S. needs a general policy master plan for developing an efficient national communication "grid" that will integrate existing and future services.
3. "The Technological Framework: Communications Networks" provides a nontechnical summary of the development of electronic communication technologies.
4. "The Technological Framework: Information Machines" is a summary of the development of computers.
5. "The Economics of the New Age" discusses the growth of information industries relative to agricultural, industrial, and other traditional service industries.
6. "The Politics of Change" is a history of the political factors that influenced the spread and impact of communication services in the United States.
7. "Exporting the Information Society" summarizes the role of the U.S. government and U.S. companies in the spread of telecommunication services throughout the world.
8. "The Open-Loop Future" summarizes the challenges and dangers associated with communication and information technologies, and reiterates the need for new, flexible policy-making mechanisms to formulate developmental guidelines.

The Coming Information Age is a timely book. It does not attempt to predict the future, an impossible task given the unpredictable economic and political forces that will shape the development of communication services. However, it does at least identify the different factors that will influence future developments in this critical area, discuss the interplay among them, and use analysis of past events to suggest future directions. The book should be of interest to almost anyone in the United States who is interested in communication and information technologies. Because of its international perspective, it should also make interesting reading for people outside of the United States who are involved in the development of communication services, the formulation of communication policies, and the application of communication technologies to human needs. ■

Available for US $29.95 cloth, and US $12.00 paper, from Longman, Inc., 19 West 44th Street, New York, NY 10036, USA.

Reviewed by Richard Martin, AID Education/Communications Officer for Latin America and the Caribbean.

2 ***Communication Media in Education for Low-Income Countries: Implications for Planning,*** by Emile G. McAnany and John K. Mayo (Paris, Unesco: International Institute for Educational Planning, 1980), 77 pp.

For those planners who tout the mass media as the panacea for educational ills in Third World countries, *Communication Media in Education for Low-Income Countries: Implications for Planning* is indeed required reading.

This 72-page monograph from Unesco's International Institute for Educational Planning is written in a crisp straight-to-the point style which focuses on some of the more pressing socio-political issues related to the use of communication media in education. The subject matter is treated by authors McAnany and Mayo with a clarity and insight that is refreshing and timely particularly in today's planning environment filled with high-risk constraints which too often mitigate against success. Their treatise is further strengthened by the fact that both auth[illegible] bring to the debate sound practical experience in the design and administering of communication projects, and a track record which lends weight and credibility to their observations and conclusions.

The booklet is divided into five subject areas which guide the reader through the critical elements in educational media planning. Beginning logically with some of the basic assumptions and approaches underlying the planning process, the authors move swiftly to focus in on four projects utilizing the mass media for formal and non-formal educational programs: The Indian Satellite Instructional Television Experiment, or SITE; Radio Santa Maria in the Dominican Republic; the Nicaraguan Radio Math Project, and the Tanzanian Radio Study Campaigns. These projects, although by now familiar to most development support planners, are selected by the authors because, "each has employed communication in a major way. Together, they also exemplify what communication media are apt to be relied upon to do in education in the years ahead."

Each project is reviewed in relation to its origin and rationale; audience characteristics; the learning system; and its scale and du[illegible] tion of impact. Together they provide [illegible] authors with ample evidence to support their belief that, "the potential of massive educational reforms through the media has now been tempered by practical experience," and their analysis forms the basis for the authors'

main conclusions on the planning issues related to the use of mass media in this sector. These issues are conveniently placed under four main headings: democratization of educational opportunity; improving the quality of instruction and learning; the impact of communication media on rural areas; and the participation of people in their own education. Those readers familiar with Unesco's philosophy on the social role and responsibility of the mass media will see echoes of this stand in the discourse on these four topic areas. Yet, it is here in this section that readers may find the most valuable contributions of the monograph. That is, the authors' ability to zero in on some of the critical dilemmas facing the use of the mass media, particularly the broadcast media, in development support work.

Too often, because of the nature of today's planning environment, planners and administrators faced with the need to offer quick, cost-effective solutions to pressing problems may find it expedient to go for the 'band-aid' approach to problem-solving without due consideration of some of the negative long-range effects of this treatment. McAnany and Mayo succinctly take stock of this factor and point out some of the more insidious pitfalls inherent in this process. For example, they note that with the use of the media to mobilize a people, as was the case of the Tanzanian campaigns, "one of the problems with the mobilization strategy for many low-income countries is that it has political consequences in sensitive rural areas where problems of inequality are most manifest and when people mobilized for one purpose begin to gather momentum for others." So planners are also cautioned that by using the media to reach large audiences in rural areas they also run the risk of creating an awareness of problems without providing any mechanisms for solving these problems.

Despite these and other invaluable insights, readers looking to this booklet as a problem-solver's guide to sensible solutions to difficult problems in communication planning will be disappointed. Indeed, throughout the booklet the authors underscore the futility of looking for easy or ready-made solutions to the issues presented. However, in their concluding chapter, they do present some keen observations and recommendations for planning. Others, particularly from the Third World, looking for new debates on micro issues affecting the use of communication in development, such as rising costs for host countries, the use of one medium over another, or alternatives to using the mass media, will also be disappointed. For Third World decision-makers faced with shrinking budgets and increasing sector problems, these are issues that are often of more critical importance than the sociological debates associated with the technology. Nonetheless, the monograph is timely primarily in that it serves as an important threshold for planners attempting to address some of the main issues affecting the relationship between education and communication. ■

Available for US $6.00 from Unipub, Customer Service, P.O. Box 1222, Ann Arbor, Michigan 48106 USA; or from Unesco, 7 Place de Fontenoy, 75700 Paris, France.

Reviewed by Wilma Lynn, a self-employed communications specialist and consultant.

3 Five particularly interesting periodicals have come out recently that we would like to call to our readers' attention.

● The popularity of the issue of *DCR* devoted to evaluation (#29) should ensure a wide interest in *Bulletin 14,* a publication of the University of Reading's Agricultural Extension and Rural Development Centre. The editorial and five articles address evaluation from differing perspectives. The lead article is a review of current methods of project appraisal (pre-project analysis) and evaluation (both formative and summative) from a careful academic viewpoint. Cost-Benefit Analysis and the variations practiced by international funding organizations, as well as Cost-Effectiveness Analysis, are reviewed as appraisal techniques. Project evaluation is discussed as to purpose, monitoring, research design, and newer methods of field evaluation. The article's conclusion sets forth the areas of continuing debate on evaluation's usefulness: the formal/scientific vs. the informal/subjective approaches. A nice evaluation bibliography accompanies the article. Other articles in the issue are concerned with how to evaluate social development; what participatory evaluation is and how it is done; and two project evaluation reports.

For readers unfamiliar with the *Bulletin,* this issue is a particularly good introduction, as the back cover lists the articles that have appeared in previous issues.

Contact John Best, Editor, Reading Rural Development Communications, University of Reading, Agricultural Extension and Rural Development Centre, London Road, Reading RG1 5AQ, England.

● Issue number 24 of *The NFE Exchange* features "Planning Non-Formal Education Projects." In the usual practical manner of publications from the Non-Formal Education (NFE) Information Center, a checklist of questions that should be answered outlines the planning process for a project. What preliminary information is needed, who collects it, who the audience is, which are the priorities, what are the objectives, what about an implementation (monitoring) schedule, what is a budget, are examples of questions that the NFE project planner should be prepared to answer. Five projects that are particularly innovative are highlighted in short case studies, and a lengthy annotated bibliography of documents related to the planning of NFE projects is given.

The NFE Information Center is at 237 Erickson Hall, Michigan State University, East Lansing, Michigan 48824, U.S.A.

● With the continuing interest in teacher training, and how to improve the quality of teaching, a publication of the Arab States Educational Technology Centre merits attention. The December 1981 issue of their *Instructional Technology* journal is devoted to "teacher training and the use of educational technology." There are original articles in English that focus on the teaching of English as a foreign language, and summaries in English of seven articles in Arabic that explore such topics as microteaching, training in educational technology, and competency-based education.

To obtain a copy of the journal, contact the Chief Editor, *Instructional Technology,* Arab States Educational Technology Centre, P.O. Box 24017, Safat, Kuwait.

● A new publication that deserves support from development practitioners is *Network IFID,* a newsletter from the joint Indian-British organization, Information for International Development (IFID). The aim of the organization is to gather, use, and share information for development, and to offer training, editing, and publishing services. IFID has access to information data bases and to specialized organizational and individual resources, with which to answer or refer enquiries. Of special interest to the IFID are teaching and play materials for children. They would like to augment their collection of, and information about, audiovisual aids, toys, games, posters, etc. To contact them about this or the newsletter, and for further information, the Asian office is: IFID, c/o IDL Rural Development Trust, P.O. Bag No. 1, Sanatnagar (IE) PO, Hyderabad 500 018, India. The European office is: IFID, Denmans, Aller, Langport, Somerset, TA10 OQN, United Kingdom.

● *Newsletter 10: Appropriate Technology for Health* is a particularly relevant issue for communication specialists and health educators. The entire issue of this World Health Organization publication is devoted to health education methods and materials in primary health care, and features some 14 reports of activities around the world.

The emphasis throughout is on innovative print materials, particularly visuals for non-readers, although folk theater and song are mentioned as communication tools.

The editorial note states that project information was more quickly forthcoming from Africa and Latin America than from Asia, and that a subsequent issue will redress the balance. For this and future issues of *ATH Newsletter,* or to share health education tech-

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niques, contact the Editor, *ATH Newsletter,* World Health Organization, 1211 Geneva 27, Switzerland.

● With regret we note the final issue of the always-rewarding *Boletín Informativo.* This publication of the Latin American Center of Adult Education, in Santiago, Chile, begun in 1972, has succumbed to economic pressures, leaving the community of adult educators of the region without a major information and communication resource. We encourage readers to continue to share materials and information with the Center (CLEA) at Casilla 16417, Correo 9, Santiago, Chile. ■

Reviewed by Judy Brace.

4 *On Being in Charge. A Guide For Middle-Level Management In Primary Health Care,* by Rosemary McMahon, Elizabeth Barton, and Maurice Piot. (Geneva, World Health Organization, 1980), 366 pp.

On Being In Charge is a long overdue textbook. Since the 1978 Alma-Ata Conference, when WHO member nations adopted the goal of "Health for all by the year 2000," publication of manuals and textbooks for primary health worker training has become popular. This is well and good, since until recently the potential of village-level primary health workers had been overlooked. Experience has shown, however, that without efficient support, supply, and supervision systems, their motivation and skills rapidly deteriorate. All too often, alas, the middle-level health workers (public health nurses, midwives, medical assistants, etc.) responsible for crucial management functions are totally unprepared for their task. A lack of appropriate management training materials has been one reason for this situation.

On Being In Charge should help fill the gap. It is the best management training guide for middle-level workers that we have seen.

The authors have designed this to be a multi-purpose manual. Individual health workers can use it for self-study, reference, or applied problem-solving. One in charge of a health team can use it to teach management skills to his team members, or for his own reference to help analyze problems, plan, implement, and evaluate health activities. Finally, *On Being In Charge* can be used by trainers and students in nursing schools or other formal health worker training programs.

The book is divided into four parts, any one of which may be studied separately or as part of the whole, according to individual learning needs. Part I deals with management in general. It is composed of five chapters which cover definitions and general principles, management functions, planning, implementation, and evaluation. Part II focuses on teamwork. Its four chapters deal with definition of the health team, leadership, organization of activities, and supervision. Part III gives practical insight into how to manage valuable resources in six chapters: equipment, drugs, money, time, space, and paperwork. The fourth and final section of the book discusses management of primary health care services specifically. The three chapters cover planning, implementation, and evaluation in primary health.

Several humorous and insightful drawings illustrate key points in the text. Tabular presentation of information at times nicely organizes and summarizes the discussion. Numerous examples of record forms, letters, charts, etc. are given to show simple but efficient methods of communicating, organizing, and record keeping. A glossary at the end of the book will assist readers unfamiliar with management vocabulary, especially those who consult only one section of the book to solve a particular problem. Unfortunately, a bibliography or list of further readings has not been included.

On Being In Charge is an extremely useful book. It clearly translates a wealth of rarely taught abstract principles into concrete and practical guidelines for middle-level workers. No primary health care program should be launched without management training for those in charge of its day-to-day operation and supervision. This textbook can help make that training relevant, understandable, and comprehensive. ■

Available from regular WHO sales agents in 74 countries; or by mail from WHO, Distribution and Sales Service, 1211 Geneva 27, Switzerland. Price is 12 Swiss francs, also payable in pounds sterling or US dollars. Special terms for developing countries are obtainable on application to the WHO Programme Coordinators, WHO Regional Offices, or the Geneva address.

Reviewed by Dr. Susan Colgate-Goldman, a nurse-midwife and international health consultant in Cameroon.

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language of instruction since such "courtesy admissions" slacken the momentum for the rest; and, most importantly, design the course according to selected participants' professional levels and expectations about formative research prescriptions.

As a result of this feedback, Stanford faculty agreed to assist in conducting such regional workshops, in collaboration with "alumni" of the original workshop. Accordingly, a three-week workshop was organized for East Africa in September 1981 by George McBean, a UNICEF communication specialist stationed in Nairobi. This workshop was held at the rural campus of the Institute for Adult Studies, University of Nairobi, and was co-sponsored by the Institute for Communication Research at Stanford and by UNICEF (see *DCR* #34, p.1). Representatives participated from nine East African nations; each then returned to his/her home country to train other government development officials in principles of improved message design research.

". . . regional workshops may be one of the most cost-effective means of improving the message-design research skills of development communicators . . ."

An important reason for holding the East African workshop in a rural setting was to facilitate the pretesting of communication messages with village audiences. Also, the focus on East Africa allowed the workshop participants to concentrate on creating development messages for that particular region and to deal with development problems that are shared by nations in that region. Dr. Everett M. Rogers, the Stanford University faculty member who participated in the Nairobi workshop, concludes from his experience that regional workshops may be one of the most cost-effective means of improving the message-design research skills of development communicators. Travel and living expenses for one or two foreign trainers are clearly less than overseas travel for two dozen participants. The trainer (with appropriate field experience) can focus on one local context shared by all the regional participants instead of having to communicate across a diverse range of local situations usually found at an international training session in the United States or the United Kingdom. Audience segmentation is crucial for effective media message design; similarly, training workshops are not successful without homogeneous audiences, since specific entry levels and needs should determine the content and format of the training.

Through this train-the-trainer-on-location approach, local and regional workshops have the potential to influence government development programs in a socially significant way. Interested teaching and training agencies in those Third World countries that lack development communication researchers may write Professor Lyle Nelson at the Department of Communication at Stanford University, Stanford, California 94305, USA, to explore the possibility of such a "train-the trainer" message design research workshop on location in their own country. ●

Bella Mody is a citizen of India who coordinates the program in Applied Communication Research at Stanford University in California. She has been involved in research and training in Asia, Africa, Latin America, and the Caribbean, from where the majority of her students come.

Posters and Population:

China Uses Billboards to Encourage Family Planning

by Stewart E. Fraser

An old form of communication in China has taken on a new twist and is booming—especially in Sichuan province. It's billboard and poster advertising—not on behalf of some blatant political message or some new, intruding capitalist's product, but in the name of family planning.

The use of various forms of advertising to promote birth control is not new to Asia. Some of the most imaginative visual propaganda efforts to limit family size have their origins over a decade ago in family planning associations in Korea, India, Singapore, Hong Kong; and more recently Indonesia.

Themes are handled on Chinese posters in a subtle, discreet, and perhaps less bold and imaginative fashion than those seen in neighboring countries. China has been reticent to produce cartoon-like posters with obvious levity.

A gradual change during the past two years, however, has been observable in official attitudes toward employing more vigorous messages and commissioning more imaginative art work to spread the word about human sexuality, contraception and child planning, and pregnancy and childbirth. Bright posters and cleverly illustrated calendars are becoming commonplace.

On January 27, 1981, Beijing's *Renmin Ribao (Peoples Daily)* stated, "All newspapers and journals and various reading materials on the popularization of science bear the great responsibility of publicizing planned parenthood."

Officials of the Chengdu Family Planning Office in Sichuan province say that the good poster represents an important and a vivid injunction—reflecting the current political and social attitudes of the government. Vice Premier Madame Chen Mu-hua, China's most senior woman in government, recently laid down new guidelines for artistic and visual talents to be fully integrated and better employed in promoting the government's policies of keeping births down and encouraging the universal adoption of the One Child Family concept.

At the national forum of directors of family planning offices, held in Beijing in October 1980, she noted: "Efforts must also be made to popularize knowledge of eugenics, birth control, maternal and child hygiene, and modern methods of child delivery. We are prepared to spend several years in carrying out intense propaganda and education in this regard."

The problem facing Chinese poster artists, along with fellow posterists in other countries, is to subtly integrate symbols, texts, illustrations and pictures for the specific purpose of encouraging the development of new attitudes. The more successful posters employ abbreviated messages, rather than focus on detailed or complex arguments. In most cases the artist needs to cater to a passing or highly mobile audience that must be quickly captivated despite limited exposure to the poster. The poster that keeps on providing mental simulation long after viewing and moves a viewer towards a positive action—say, signing the pledge for a one child family—is especially valued.

Another theme is that girls are just as good as boys (in fact, they may be much better!)

Another prominent theme is that girls are just as good as boys (in fact, they may be much better!). The latest posters show mothers and daughters—or, more precisely, a mother and a daughter. There is significantly a lack of posters showing fathers or even couples with a son. Where a family grouping is portrayed it generally shows the couple with a daughter.

Earlier posters pictured birth control staff, or barefoot doctors, joyously but firmly advocating the contraceptive pill (the English equivalent of "a pill a day will keep the pregnancy away"). The theme of a happy, contented, well baby is reinforced by the suggestion that the only well babies are of the "single sibling variety." In other words a *single* baby is synonymous with a *healthy* baby.

Sichuan province is now recognized as one of the more advanced regions in China promoting a strict system of birth curbs. The Chengdu City Family Planning Office is making a name for itself with the production of a range of imaginative promotional materials. These include a most attractive fan depicting on one side a well-known tourist attraction, the thatched cottage of Tu Fu, the revered eighth century Tang dynasty poet. On the reverse side of the fan in beautiful calligraphy is the now famous "Open Letter of September 27, 1980, on Population Control" issued by the Chinese Communist Party to all members. It exhorts them to use birth control and opt for the One Child Family as their patriotic duty to save China from housing a population of more than 1200 million by the year 2000. The cleverly illustrated fan is but one of a variety of propaganda props the Chengdu Office of Family Planning is now issuing to all prospective couples.

Perhaps the most startling testimonial to the launching in Sichuan of a high-powered birth control campaign is the enormous, bilingual billboard that has just appeared in the central city square of Chengdu. A handsomely designed poster 25 meters long and 6 meters high adorns the most important thoroughfare of the city and boldly, in both English and Chinese, projects the slogan: *"You'd better have one child only!"*

It would appear that the Chengdu bilingual effort to curb population growth in China is unique for both its size and its immediate appeal, with the slogan written in the two languages read by the majority of the world's population.

Virtually all high school students in Chengdu are now studying English, and those concerned with introducing population education into the middle school curriculum have wisely adopted a bilingual approach to this major problem and presented it to youngsters at an early formative stage.

Students I talked with in Chengdu both knew of the campaign's population implications and were proud that their city had the imagination to convey and share the message with the many foreign visitors now visiting Sichuan province. The province is recognized as a model in China's current effort to limit population growth during the 1980s when nearly 100 million Chinese youth will reach marriage age. ■

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English *Project Profiles* Now Available

The Clearinghouse on Development Communication is pleased to announce that the reprinted English-language *Project Profiles* are now available. The *Profiles* are a series of brief descriptions of development projects around the world that have had a strong communications component. The paperbound volume contains a detailed index which identifies the projects by country, sector, and communciations media used. The book is available at a cost of US $10.00 (payable by check or money order to AED) to readers in the developed world. Readers in developing countries may request the *Project Profiles* free of charge. To order, please write the Clearinghouse, enclosing payment where appropriate. *Profiles* will be sent by surface mail. ■

On File at ERIC

The selection and use of communications technology in distance education, nonformal community education activities and resources, and educational radio are the focus of reports from the Educational Resources Information Center (ERIC) files reviewed in this column. All are available on microfiche or in paper copy from the ERIC Document Reproduction Service (EDRS), P.O. Box 190, Arlington, Virginia 22210, USA.

- White, Robert A. *Motivational and Social Factors in the Use of Communication Technology for Education.* 1980, 42 pp. (ED 211 043)

This review of the evidence on the motivational, pedagogical, and social factors which influence the effectiveness of new communications technology for distance education in developing countries discusses the importance of this technology and the current directions of research in this field; motivational factors that are important in distance education; and some of the pedagogical problems and social factors that are influential in distance education. Twenty-eight references are listed. Available from EDRS in microfiche for 91¢ or in paper copy for $3.65 plus postage.

- White, Robert A. *Structural Change Criteria in the Selection of Strategies of Communication for Development. An Examination of Two Contrasting Media Systems—National Television and Local Public-Service Radio Stations—in the Light of Structural Change Criteria.* Paper presented at the Annenberg School of Communications Conference on Communications for the 1980s, May 1980, 27pp. (ED 210 033)

This paper discusses the important link between social structure and communications systems, and explores some of the practical policy implications resulting from this relationship. The concept of social structure as the basis of a pattern of communication is clarified, one paradigm of communication structure typical of many Third World countries is analyzed, and the criteria for communications policy implied in this structural process is summarized. Finally, an examination of the evidence on the importance of such "intermediate media" as local public-service radio provides an example of the application of structural criteria in selecting alternative communications strategies. Thirty-six references are listed. Available from EDRS in microfiche for 91¢ or in paper copy for $3.65 plus postage.

- Brown, James W. *Instructional Technology and Learning Resource Center-Based Community Education.* San Jose, CA: California State University at San Jose, 1977, 202pp. (ED 211 072)

A survey of nonformal community education activities was conducted to determine specific uses of media for identified educational and informational purposes. The results presented in this report are intended to provide resource information to professionals and paraprofessionals who ultimately may be employed in Learning Resource Center-Based Community Education System (LRCBCES) programs in Latin America. Topics covered include (1) instructional technology and the systematic approach to learning; (2) the systematic approach and the LRCBCES project; (3) the broadcast media; (4) media and the LRCBCES approach; and (5) media utilization, including print, motion pictures, video, audio, pictorial (still), symbolic, graphic, dramatic, interpersonal, 3-D, and real. Related readings are listed for each chapter, and appendices include a worldwide directory of organizations working with instructional technology in developing countries and a list of useful periodicals. Available from EDRS in microfiche for 91¢ or in paper copy for $15.20 plus postage.

- O'Grady, Barbara and Ruth Levenson, Eds. *Mobilizing Rural Community Resources for Support and Development of Local Learning Systems in Developing Countries.* Washington, DC: Academy for Educational Development, Inc., 1978, 122pp. (ED 207 756)

Focusing on how local village communities in developing countries might support part or all of their educational costs, this study describes methods used in such countries to reduce the costs of education, and offers a model incorporating several of the most successful components of these projects. Methods used by governments to reduce education costs, such as salary freezes, lotteries, and patriotic service alternatives, are described, as well as methods designed to provide local support of education. Community projects which incorporate traditionally used techniques into the formal school, maximize use of school facilities and personnel, and introduce such technology as radio are examined, and a comprehensive model based on the more successful community projects is offered. A list of appropriate social criteria whose presence is necessary includes a traditional structure of communal self-help; the presence of a convincing/charismatic leader; and outside intervention such as capital loan funds, technical assistance, and training. The model includes communal construction of educational facilities, external loan funds, home tutors and instructional supervisors, support by radio-based instructional materials, commitments to specific income-generating tasks by students and parents for school support, community project management and training, and technical assistance from national sources. Appendices contain project case studies and summaries. Available from EDRS in microfiche for 91¢ or in paper copy for $8.60.

- Ahamed, Uvais and George Grimmett. *Educational Broadcasting — Radio.* Kuala Lumpur, Malaysia: Asia-Pacific Institute for Broadcasting Development, 1979, 115pp. (ED 212 295)

This manual is intended for those who must conduct educational radio broadcasting training courses in Asia-Pacific countries without the resources of experienced personnel, as well as for individuals to use in self-learning situations. The selection of materials has been influenced by the need to use broadcasting resources effectively in programs of national development, in which educators need to understand the work and skills of broadcasters, and broadcasters the problems and constraints in the imperatives of education. Thus the scope of the units spans both formal and nonformal education. The 20 units cover the planning of educational broadcasting activities, i.e., the fusion of education and broadcasting; the communication process; the curriculum and its importance as a framework for educational broadcasting; formal and nonformal education; the application of educational media; the role of the educational producer; the learning process and its application to broadcasting; the use of objectives and systematic planning; writing for radio; various program formats, including the interview, documentary, discussion, and drama; the design and use of support materials; and utilization, evaluation, management, and organizational considerations. Available from EDRS in microfiche for 91¢ or in paper copy for $8.60 plus postage. ■

- Cutler, Morris. *Using Radio's Potential to Teach Language Arts.* 1981, 8pp. (ED 211 977)

The Radio Language Arts Project (RLAP) is a pilot program being developed in Kenya to provide a cost-effective English-as-a-second-language program via radio to rural children. The RLAP will use an integrative language arts approach focusing on language function, meaning, and communication activities, with listening and oral language preceding reading and writing. Each 20- to 30-minute broadcast will consist of several brief segments of varied learning activities designed to teach or maintain a skill, and will allow as many as four to eight pupil responses per minute. Children in the primary grades will receive English instruction via daily broadcasts; will talk, write, and respond physically throughout the program; and will receive immediate results to stimulate learning. A teacher's guide will provide classroom teachers with information about each lesson and suggestions for their participation. After each broadcast, classroom teachers will direct additional oral and written language exercises. Evaluation of the project will include trained observers noting

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pupil reactions, and a measure to compare the achievement of pupils taught by RLAP with that of pupils taught by conventional methods. If successful, the RLAP will provide improved instruction of English at a lower cost to a greater number of students, and its design will allow for its transfer, intact or with alterations, to other geographical locations to meet their needs. Available from EDRS in microfiche for 91¢ or in paper copy for $2.00 plus postage. ■

Barbara B. Minor, Publications Coordinator, ERIC Clearinghouse on Information Resources, School of Education, Syracuse University, Syracuse, New York 13210, USA.

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Objectives of ACC

The long-term objective of ACC is "to enable people of developing countries to accelerate the process of development" so that they may participate fully in and contribute to the further development of the emerging international system which places a high value on horizontal socio-economic growth. The strategic objective is therefore to create a technological environment in developing countries which will facilitate horizontal development of communication capabilities.

In concrete terms, ACC will provide facilities for graduate studies in computer science, electronics engineering, satellite technology, and alternative energy technologies. These studies will have a research bias directed towards communication problems in developing countries, particularly in such areas as the development of low-cost cheap-energy-powered receiving units for DBS (direct broadcast satellite) TV. ACC will also provide fellowships to visiting scientists from the international scientific community so that a lively exchange of scientific knowledge will be possible.

ACC will encourage the development of computer and TV software packages for developing countries. The resources of many other agencies in Sri Lanka will be available in this area. Some of these agencies include the Universities of Colombo (computer programming) and Sri Jayawardhanapura (Mass Communication), the Worldview International Foundation (TV production training), and the various media organizations in Sri Lanka (press, radio and TV practical training). The Worldview International Foundation is an international NGO with headquarters in Sri Lanka which implements media projects on a South-South and South-North basis.

Another facility which will be developed at ACC will be a Policy Analysis unit, an interdisciplinary think tank which will study the relationships between technology, society, economics, and government policies. Policy studies will be initiated by ACC itself or at the request of participating governments.

ACC will develop over time a capacity to originate a daily telecast by satellite to participating developing countries. The telecast will consist primarily of ETV material produced in developing countries. Initially this material would have to be received by satellite earth stations and later slotted into national TV programming.

It is also envisaged that ACC could in the future, develop into a satellite university for the developing world using teleconferencing facilities and Gemini 500 electronic chalkboards. In this connection the experience of the limited-life Indian APPLE satellite will be invaluable. One of the various experiments with socio-economic goals that APPLE is to perform is 'teleteaching'.

Phasing in of ACC

The ACC proposal identifies two phases of implementation, the second overlapping the first. Phase I, which has been budgeted at $5,000,000 with $1,000,000 coming from Sri Lanka, will last three years. Phase II, part of which runs concurrently with Phase I, will also last three years.

Phase I provides for postgraduate and in-service training courses in satellite and terrestrial communication links, radio and TV broadcasting networks, databanks, computer hardware and software development; initiation of research and development in application; communications and computer technology in specific and general developing country situations; and the development of an advisory service for communication and computer-related industries in the developing world.

During Phase II, training programs for editorial production will be introduced, and earlier programs will be expanded and intensified. Research and Development will focus on areas such as use of DBS by developing countries, better utilization of radio frequency spectrum in order to benefit the rural developing world, and the study of political, socioeconomic, and technological systems as they affect developing countries specifically and generally.

Support for ACC Proposal

The ACC proposal was presented at the Acapulco IPDC (International Program for the Development of Communication) Council Meeting (February 1982) and was recommended for IPDC support by the Council. The Commission further decided that a preparatory study for ACC should be carried out under the Unesco Regular Program.[7] This study is presently being conducted by a team of Unesco experts in Sri Lanka.

ACC and Development

Billions of US dollars have been spent on space research. At one time criticism was often heard that instead of pouring money down a space sink, man should see to it that his fellow travellers on spaceship earth went to sleep with their stomachs full and with roofs over their heads. The answer to that criticism was that space technology would spin off rich dividends to the poor of the developing world. With the development of space platforms, shuttles, photovoltaic power, home-receiving TV equipment, teleconferencing, and microchips, the harvest is ready. The technology exists to initiate a major global distance education system or network of systems through which the rural developing world can learn of methods by which they could improve their lives and livelihoods even in the short term. The major obstacle to the introduction of this system is the lack of a technological platform in the developing world. ACC is such a platform.

In this age of communication "birds" and killer satellites, it is worthwhile to pause and consider these words of H. G. Wells:

> Human history becomes more and more a race between communication and catastrophe. Full use of communication in all its varied strands is vital to assure that humanity has more than a history—that our children are assured of a future. ■

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This article is adapted from a paper presented to the World Future Society Conference in Washington, D.C., July 1982.

Naren Chitty is Counsellor at the Embassy of Sri Lanka in Washington, D.C., and was formerly consultant to the Sri Lankan Ministry of State. He is particularly interested in the possibility of using satellite technology for rural education, and with the development of a global open university.

Can You Contribute?

The Clearinghouse on Development Communication is looking for new and interesting development projects that have successfully used a communications medium. Documentation concerning such projects, especially any evaluation done to date, would be most appreciated. If you have, or know of, a project in agriculture, health, nutrition, family planning, education, or integrated development that has a communications component, please write to us.

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ticular program in advance. Alternatively, program planners and producers should be sure that facilitators are given details of each program *well in advance of the broadcast date,* together with some suggestions for using the program effectively.

2. Advise the group of the topic and objectives *before* and then again *immediately after* the broadcast.

A great deal of valuable time can be wasted by trying to get the group to agree on the topic and objectives of the program. The main aim of a listening group is not to find out what the program was about, but to use the program as a starting point for discussion and action. It is therefore much more effective for the facilitator to sum up the topic and objectives, so that everyone in the group is working from the same starting point.

3. Determine the program *type* and the best use to which that type of program can be put.

The program will usually fall into one of three categories listed below, and there is a particular program plan you can follow for each of these program types. The important thing is to know where you want your discussion group to be *at the end of the discussion* and to direct the discussion to reach that goal. Undirected discussion usually gets nowhere very fast. Radio programs designed to disseminate information tend to fall into three main categories:

1. *Exposure and Information Programs*

These are programs designed to give new information and they are not necessarily intended to change attitude or behavior. They should lead to a desire for even more information on the topic. At the end of an *exposure and information* program, you will want your participants to:

- understand the information presented in the program;
- contribute any personal information or experience relevant to the subject;
- list any questions they still have on the topic;
- determine what they should do with their questions. (They may want to send them to the program producer, or they may want to invite an expert to come to their village to answer the questions directly).

2. *Skill-Teaching Programs*

These programs are designed to lead to a change in attitude and/or behavior on the part of the listeners. The outcome should be some measurable *action.* In a discussion following a *skill-teaching* program, you will want your participants (by the end of the discussion) to:

- understand what new skills have been presented in the program;
- know where to go for more information;
- plan action that can be taken to introduce these skills locally if relevant;
- plan follow-up action that can determine if the new skills have been implemented and if any problems have arisen.

3. *Support Programs*

These programs are designed to support and encourage the continuation of existing attitude and/or behavior. They are frequently used as follow-up to a series of skill-teaching programs in a campaign.

In a radio listening group following a *support* program, the end product of your discussion should include:

- plans to ensure the continuation of existing attitude and practices;
- plans for follow-up to ensure that existing attitudes and practices are maintained on a long-term basis.

Remember, you are the facilitator only—your participants should do the real work of the listening group. For each of the three program types, there is a particular *task plan* you can have your group follow. Remember to alert them to their task plan before you begin the discussion. This helps keep them on target.

Task Plan for an Exposure and Information Program

In order to be sure that everyone has understood what information the program is presenting, you should have someone briefly re-state the program content. You can invite one of the participants to summarize the main points of the program." Such an invitation will soon make it clear to you how well the program content was understood.

- Next, ask participants to contribute what they know on the subject from their personal experience (which may include things they've observed).
- Ask them to list any questions they have.
- Ask them to decide what they would like to do with the question list they have prepared.
- Have them make a plan to follow up on what they have decided to do with the questions.

Task Plan for a Skill Instruction Program

You will want to be sure that the group understands what particular skill or technique is being introduced in the program, so again you should:

- Invite someone to re-state the main content of the program.
- Next, have the group discuss the possible advantages they could gain from adopting this new skill or technique.
- Have them discuss any problems that might arise if they *do* adopt this new skill or technique.
- Have them determine what information they would still need before they could decide to adopt this new skill or technique.
- Invite the group to formulate a plan of action for finding the information they need.
- Help them determine a plan of action that would put the new skill or technique into operation—if they are ready to do that.

Task Plan for a Support Program

Remember that since this type of program is meant as reinforcement of a positive action already underway, you need to determine what it is that your participants are supposed to be doing. Then the first step again is:

- Invite someone to re-state the main points of the program.
- Then, invite your participants to discuss the question of whether or not they are already engaged in this particular behavior.
- If they are not, ask them if they can see the advantages of adopting this behavior.
- If they are already engaged in it, invite them to discuss the advantages of continuing this behavior and encouraging other people to adopt or continue it.
- Then invite the group to organize a *plan* to encourage them to continue the behavior over a specified period of time.

Determining that the Audience Understood the Program

By inviting participants to re-state the main points of the program, you can find out how well they understood it. In most programs, it is not difficult to give a brief and clear summary of the main contents. There are, however, some program formats that make this task more difficult. A program that is presented as a story or a drama may require that the participants first understand and delineate the plot of the story before identifying the main "teaching points" of the program. In order to restrict the group partici-

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Readers are invited to submit typed manuscripts of no more than 1000 words, and to send in photographs.

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pants to a brief overview of the story, and not a detailed retelling of it, you might want to ask them to outline the story by using the "5W + H" *question frame:*

WHO	was the story about?
WHERE	did the story take place?
WHEN	did the story take place? (past, present, future)
WHAT	were the main things that happened in the story?
WHY	did they happen?
HOW	was the story (or the problem) resolved?

You can also use the questions WHY, WHAT, and HOW to lead the discussion from the story to an application of its main points to the group needs:

WHY	should our group be interested in this topic?
WHAT	can we do about it in our village?
HOW	can we put this idea into action?

Summarize, Point, and Direct the Discussion

After the completion of each step in the *task plan,* the facilitator should summarize what has been accomplished or decided, and remind the group participants of the steps still ahead of the group. This summary and direction approach is an excellent way of keeping the participants on target in a positive fashion.

Suggest Follow-Up Activities

At the end of each discussion, it is helpful for the facilitator to give the group some idea of its agenda, and to arrange a particular time at which they can all meet again to discuss what has happened to plans and decisions.

Practical Duties of the Facilitator

In addition to understanding program formats and types and the organization of task plans, there are some more particularly concrete things that the facilitator can do to ensure the comfortable running of a radio listening group. These include:

1. Being sure the radio is in working order;
2. Seeing that everyone in the group can hear the radio;
3. Positioning the radio so that everyone can *see* it. (Somehow most people seem to hear better when they can *see* the thing they're listening to);
4. Setting the rules for the discussion;
5. Placing himself or herself physically *in* the group rather than *in front* of it;
6. Being dedicated to the main goals and objectives of the group for whom the listening group programs have been produced;
7. Being on time all the time and attending sessions regularly (even when there seem to be difficulties in the way);
8. Keeping up-to-date with training workshops and ideas;
9. Setting a high standard of listening concentration;
10. Reducing the discomfort that some participants may feel when being asked to take part in a listening group. This can be done by:
    - encouraging all participants to air their views;
    - observing and understanding how the people in the group relate to one another and organizing the group to allow for this interrelationship;
    - observing and respecting local village traditions;
    - adopting an encouraging and "non-school-room" voice;
    - being willing to be heard as infrequently as possible, so that group members may be heard as much as possible.

Using an Observer

From time to time, it might be helpful to invite someone to observe your radio listening group in action and give you an honest appraisal of what happens. It is always difficult to be objective about something we're personally involved in, so an observer can be helpful. The observer should watch for the following things while the group is in session:

1. Seating arrangement—is everyone comfortable, able to be heard and able to see and hear the radio?
2. Is everyone taking part or is the discussion being "taken over" by one or two people?
3. Are the facilitator's questions effective:
    - can they be heard?
    - are they clear?
    - are they directing the discussion effectively?
    - are there too many questions? Too few? The right number?
4. Does the group work comfortably together?
5. Does the discussion actually "get somewhere" by the end of the discussion?

Needless to say, the foregoing guidelines are suggestions only. There is no such thing as the "right" way to lead a radio listening group discussion, but sometimes it is helpful to have a guideline to use—particularly when you are new to the business of running a radio listening group. You will no doubt make your own amendments to these suggestions in accordance with the needs of your group, and your own style of presentation. ■

Esta de Fossard is an international media consultant specializing in informational radio and television. She is the author of many books and articles.

Should You Add an 'S'?

Should there be an 's' at the end of 'communication'? If so, when should you use it? There is widespread inconsistency in using the word in the singular and plural forms.

Some claim that it makes no difference and the forms can be used interchangeably. Others, like Dr. Edwin H. Maynard of United Methodist Communications in the U.S.A., claim there is a difference.

In a recent memo written for a staff colleague, Maynard suggests the following rules for using the word:

1. When the word is used as a noun representing the act or process of communicating, it should be singular. Examples: a theory of communication; the communication of the Gospel; television is a medium of communication.

2. When the word is used as a noun standing for multiple acts of communicating, or multiple messages, it is appropriately plural. Examples: communications in and out of Warsaw were cut off for three days; AT&T built an empire of telecommunications; United Methodist Communications.

3. When the noun is used as an adjective (an aberration of the English language), it should be written without an 's'. In English we do not have singular and plural forms of adjectives. We should say 'a communication device' just as we would say 'a green device' or 'communication devices' and 'green devices.' Examples: a telecommunication system; the communication revolution; the advent of a communication age.

4. In official names and titles one is obligated to follow the usage that has been determined, even though it may contradict the rule. Examples: Federal Communications Commission (wrong, but official); *The Communications Revolution* (a book title).

As he looked for examples, Maynard found that most writers appear to have no guidelines on the proper use of the word. RFC News Service provided this report on Maynard's helpful analysis. ■

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Media and Support Materials Promoting Fish Ponds in Ivory Coast

by Ute Deseniss, UNICEF-Abidjan
translated from "Le Poisson C'est Bon"
by Gill Bevington, UNICEF-Abidjan

The sound of the tam-tam got louder as we approached Natiokobadara, a small village about 20 km away from the Prefecture of Korhogo in the North of the Ivory Coast.

An excited, joyful, colorful crowd was there waiting for the Prefect to come and open the Natiokobadara school fish pond.

Not far from the road there were three rectangular ponds full of water, sparkling in the sunlight. On closer view you could see a large, attractive poster, attached to a pole beside the first basin. It depicted a young boy with fish in his hands. His smile expressed joy and conviction. He seemed to be saying "Fish is good," which was the slogan written at the top of the poster.

The Prefect and the sub-Prefect of Korhogo, the Director of the Department of Water Supply and Forests as well as the Chief of the District, the village leaders, the representatives of the FAO/UNDP project and of UNICEF sat down in chairs set out specially for the occasion.

Then Zobo Patrice, a fifth grade pupil at Natiokobadara school welcomed everyone on behalf of his fellow pupils. He said: "Like the manna which came from Heaven to save those who were starving, one day we received a delegation from UNICEF to our school. As you can see, it was in order to build fish ponds in our school. This news was very warmly received by everyone, even by the tiniest children from kindergarten, as everyone was aware how much our body needs its daily ration of proteins and vitamins. The fish came just in time. Don't forget that we have a school canteen here. So we can easily grow big and have the strength to learn our lessons well."

While the guests were listening to the various speeches, the pupils of Natiokobadara continued emptying the school fish pond. The Prefect finished his speech with the words: "I am honored and pleased to open the school fish pond in Natiokobadara." At that moment, the pupils lifted the net teeming with fish amid cheers and cries of enthusiasm. We later learned that there were about 95 kg of fish in the net.

Promotion of Pisciculture

The Government of the Ivory Coast, in its efforts to enrich the diet of the population, launched a three-year pisciculture project in 1978. It aims to fight against deficiencies in animal protein, and to make fish farming an income-generating activity for the rural population. The project, financed by UNDP and the Government of the Ivory Coast, was carried out by FAO and Government staff. It covered the areas of Bouaké, Korhogo, Man, Daloa, Aboisso, and Bondoukou.

School Fish Ponds

When the pisciculture project was launched in the Korhogo area, the headmaster of the school in Lataha contacted the district extension worker for pisciculture for his assistance in building a fish pond. Since school fish ponds were not included in the UNDP/FAO project, UNICEF was contacted. The response was favorable as children were to benefit directly from this project. News of the success of the Lataha school fish pond spread very quickly throughout the region. The result was that, a year later, nine other schools—among them Natiokobadara—also started building school fish ponds.

UNICEF helped to finance the construction of the school fish ponds, the equipping of schools with the necessary materials a[illegible] the production of audiovisual materials f[illegible] sensitization and education.

Although breeding fish is not very difficult, some basic knowledge needs to be acquired. Training is thus provided to the project staff.

The training course lasts three months. There is also a one-month refresher course each year. Trainees learn about pisciculture with the help of audiovisual aids. After the course, they each receive a set of the aids to enable them to train the people in the villages, schools, co-operatives, etc.

The audiovisual materials comprise poster, cassettes, slide set with commentary, flannelgraphs, booklet, view master. These materials were developed in conjunction with various government organizations.

Program Support Materials

In the Ivory Coast, there are numerous possibilities for communicating with the rural population, which explains the great variety of materials used.

Poster: This is the poster entitled "Fish is good" described earlier. It was displayed in villages, schools, and administrative depart[illegible]ments. It is an excellent means of open[illegible] discussions and debates on pisciculture, nutrition, and other related subjects.

Cassette: In the Ivory Coast, there are radios and cassette players in practically all the villages. Every evening, under the "palabre" tree, people sit around to listen to programs and to chat. Taping information on cassette is therefore a very good means of communication.

Cassettes have an advantage over the ra-

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Extension and Communications in Nepal
Reforestation Program Uses Media Support

by P. K. Manandhar, E. Pelinck, and R. H. Gecolea

Nepal has embarked upon a massive campaign of reforestation in the hills by enacting new legislation that provides for giving the villager greater responsibilities for and benefits from existing forests and from plantations to be established. This article is excerpted from a longer paper which describes the various steps which were taken to develop a comprehensive training and development program in support of community forestry development. The original paper, entitled "Extension and Training Components of Community Forestry Development in Nepal," was delivered at the FAO/SIDA Seminar on Forestry Extension in Semarang, Indonesia, in January 1982.

The Community Forestry Program

Background

Deforestation has been a serious problem in Nepal for many years. Between 1950 and 1975, one quarter or more of the total forest area disappeared. It has been stated that if this trend continues, all accessible forests will disappear in the next 15 to 25 years.

Forest products are vital to the survival of Nepal's predominantly rural population. Fuelwood, which accounts for over 95 percent of the wood consumption, will remain the principal source of energy as long as supplies last. Equally, almost every rural family keeps some livestock and a large percentage of the animal fodder comes from forests and trees grown on farmlands.

As the population increases, the demands for the products of the diminishing forest areas grow. This has led to widespread hardship for the rural population and to a general environmental deterioration in the hills since the late 1950s. His Majesty's Government of Nepal (HMG) has recognized the need to check deforestation. Initially, HMG tried to solve the problem by nationalizing all forest areas and controlling tree cutting. But enforcement of this policy, especially in the hills, proved to be difficult. More importantly, the hill people, who had always considered these forests as communal property, were no longer inclined to apply their traditional management systems which ensured sustained yields from the existing forest.

A New Policy

In 1978, HMG adopted a new forest policy. This allows for national forest lands to be handed over to the care of the rural communities, seeking at the same time their active participation in reforestation and forest protection work. A vital component of the new policy is the communications and extension service. Two new forms of land tenure have been introduced, the Panchayat Forests and the Panchayat Protected Forests.

In essence, Panchayat Forests are new plantations established on government-owned wastelands. The local panchayat—an administrative unit comprising several villages with a total population of 2,000 to 4,000 persons—is responsible for the planting and protection of the trees, and, in return, obtains all rights to the produce of the forest. The Panchayat Protected Forests are existing forests which require upgrading by partial replanting and protection or need to be maintained by instituting a viable management system. In return, the local panchayat can collect fuelwood, fodder, and minor forest products for local use and receives 75 percent of any revenue derived from the sale of logs or other major forest products.

Development of the Training and Extension Program

Departments in the Ministry of Forest and Soil Conservation did undertake some extension-related activities in the 1960s and 70s. Publications, posters, films and slides, and materials for radio broadcasts were produced sporadically. However, such communication efforts were not institutionalized, nor were field-workers mobilized for forestry extension to any significant extent.

With the adoption of the new forest policy in 1978, the need to establish an extension function within the Ministry became quite clear. The success of the new system of forest land tenure obviously rested largely on the degree to which villagers accepted custody of the forests and on how competently they managed them. In planning the community forestry program, therefore, HMG took into account its motivation and education aspects. These aspects will be referred to collectively in this paper as "extension."

HMG, with assistance from the World Bank, UNDP, and FAO, had earlier laid down the broad framework for communication and motivation activities within the community forestry program. In addition, however, DTCP (The UNDP Asia and Pacific Programme for Development, Training, and Communication, based in Bangkok) suggested that certain guidelines or premises be used as a basis for building the extension function. The basic premise, adopted from experience over a number of years in different Asian countries, is that the Department's network of field-workers is the single most important channel of forestry extension. They are the persons living among the potential beneficiaries of the program and would provide the services as well as disseminate information on the government's new forest policy. In view of the high rate of illiteracy among the hill population, the delivery of extension services must rely heavily on face-to-face or interpersonal communication. The

(continued on page 2)

In this issue . . .

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(continued from page 1)

use of mass communication media, mainly radio and posters, would be resorted to only to *support* person-to-person or person-to-group communication being undertaken by field-workers.

Forestry Extension Activities

Agricultural extension services were originally established to help farmers increase their income and raise standards of living by bringing to them improved farming practices. Forestry extension essentially adopts the same objective and can use many of the same methods as in agriculture. However, forestry extension—and in particular community forestry extension in Nepal—poses two special problems not commonly found in agricultural extension. The first is the long period that must elapse before improved forestry practices produce benefits. Where agricultural crop calendars can be measured in a few months, it takes years or decades for trees to deliver their rewards.

Second, communal custody and management of forests can only succeed with consensus and concerted action by entire communities. In agriculture, an extension program can be pointed towards success by initially convincing and aiding only a handful of farmers to try new practices on their farms. There is reasonable assurance that they will be generally conscientious in seeing to it that the practices succeed. In community forestry, such small trials cannot be depended on. It will not do for a handful of dedicated villagers to plant tree seedlings in a communal forest, only to have their seedlings trampled the next day by cattle being grazed by other villagers.

Training and Extension Materials

Various types of communication materials have been developed to make field extension and training activities more effective. All visual aids were drawn by a Nepali artist with the advice of a DTCP visual media specialist with technical inputs from national and international staff at the Community Forestry and Afforestation Division (CFAD). Extension materials were field-tested before final printing, and training materials were scrutinized for their technical content by several foresters.

Training Materials

To standardize a number of basic principles in nursery establishment and forest plantation and management, a number of training aids have been prepared.

1. Nursery Flip-chart

A black-and-white flip-chart of 21 pages (70×55cm) was produced to illustrate the various steps in the establishment of a tree nursery and the growing of tree seedlings. Printed copies of this flip-chart were distributed to each Forest Division and institutions and organizations involved in similar programs. They are being used in training prior to the establishment of nurseries. Each flip-chart fits into a specially designed plywood box, which serves as storage when not in use and as a stand for the chart during teaching sessions.

2. Plantation Flip-chart

The establishment and maintenance of tree plantations are the subjects of another set of 17 flip-charts for training prior to the planting season.

3. Nursery and Plantation Booklet

The Nursery and the Plantation flip-charts were also reproduced as a booklet (20×15cm), which the trained field officials can keep for their future reference. These booklets have the same picture as on each of the flip-charts on one page and a more detailed description of the particular subject on the opposite page.

4. Filmstrip on Nursery Establishment

A color filmstrip was also prepared to make the training more attractive and to carry the same message in a different form. However, the logistics of providing adequate projectors to each of the Divisions poses some problems. Different types of projectors with rechargeable batteries are presently being tested.

Field Extension Materials

As community forestry is a completely new concept of forestry, a comprehensive program has been developed to make people aware of the opportunities for participating in the program. The message of community forestry has to be brought to the villagers by the Community Forestry Assistants and the Divisional Forestry Officers. To facilitate their work the following materials have been developed:

1. Community Forestry Extension Flip-chart

Three hundred copies of a flip-chart of 20 black-and-white illustrations were printed. This flip-chart is intended as a visual aid for the field officials during their information and motivation work in the villages. The flip-chart illustrates the need for forests and their products, including ecological aspects, the problem of population growth and dwindling forest areas, and the solutions proposed under the new policy—the establishment of Panchayat Forests and Panchayat Protected Forests.

2. Community Forestry Extension Booklet

A 20-page booklet has been produced in response to a request from the CFAD field officials to hand out to literate members of the public after their information/motivation sessions in the villages. The booklet explains in simple language the need to protect and replant forests, the new forest policy, the various kinds of assistance provided by the government, the responsibilities of the local panchayat, and the distribution of benefits from Panchayat Forests and Panchayat Protected Forests.

3. Posters

Several posters have been designed, each of which has one or two messages, e.g.: dependence on forest (present and future); fire protection; free distribution of plants from panchayat nursery; the distance to walk for fuelwood, and the scope for planting trees around the house and in Panchayat Forests.

Posters will be distributed to villagers, panchayat offices, and government offices.

4. Signboards

As mentioned before, nurseries are established in each panchayat which participates in the program. The seedlings grown in these nurseries are to be planted in the new Panchayat Forests or Panchayat Protected Forests. However, seedlings are also distributed free of charge to every villager who wants to plant trees in his own fields or yard. A signboard was designed for display at the entrance of the nursery or in a highly visible location close to the nursery, where it can attract people's attention to the distribution of free seedlings. As there are no motorable roads in the hills, people on foot can easily see signboards and stop and ask questions of the Forestry Foreman at the nursery. It displays the program's logo, and the name of the sponsoring government agency (Community Forestry Development Programm

5. Seed Collection and Sowing Calendar

To help field-workers, in particular nursery foremen, a calendar was prepared with names of trees whose seed should be sown or collected in each month.

Public Information

The communication campaign pays particular attention to the primary and secondary schools in the program area. One reason for this attention is that the conservation of forests is of such importance to Nepal that its citizens should learn at a very early age about the proper harvesting of forest products and about conservation and protection.

Another reason is that schools, which are spread throughout the country, can be an effective channel of interpersonal communication on a national scale. If all the teachers and students can be persuaded to share their knowledge with their relatives and friends, a significant portion of the population can be reached. Based on this consideration, the school publication, a combination of folder (for teachers) and wall chart (for students), has been designed in such a way that it can also be used outside the areas specifically included in the program.

From the very beginning the Community Forestry and Afforestation Division was made responsible for a weekly 10-minute radio program by the Ministry of Forests. While many different aspects of the program

(continued on page 14)

Using Puppets To Teach Ideas

Khel Dori Ka, An Audiovisual with Puppets from Bombay

Myron J. Pereira

The Xavier Institute of Communications, Bombay, is a training institute for the professional mass media. However, precisely because in India, the organised mass media comprise only one section of public communications, the Institute takes a great interest in group communications and in the smaller media. And one traditional medium which has asserted itself anew even in an urban context is puppetry.

The range of puppets is well-nigh infinite. At Xavier Institute, in the ASTHA Department (ASTHA is a Marathi word meaning 'concern') two kinds of puppets are commonly used, *hand-puppets* (also called *glove-puppets*) and *shadow-puppets.* There's a reason for this. Hand-puppets (and glove-puppets to a lesser degree) are among the simplest to fabricate and the easiest to use, and Ashok Kondhalkar and Prakash Gaikwad who head the puppetry unit, have got the maximum effectiveness from the slenderest equipment.

Usually the ASTHA puppet unit functions in this fashion: An invitation is received to present a puppet show in a neighboring school or welfare center or in a slum club. Ashok, Prakash, and their team present a half-hour program (usually one or two skits, presented live with a lot of leeway for audience participation!), and then invite reactions from the audience. A presentation usually leads to a request to conduct a training workshop, for puppetry is one medium which provides for a variety of talents—from designing and fabricating the puppets, to scripting and presenting the show—and almost everyone has something to contribute. In the course of a year and a half, ASTHA has conducted some seven workshops for groups as diverse as fieldworkers in urban slums to kindergarten schoolteachers.

So production, presentation, and training in puppets has been very much part of ASTHA's investment in folk media. The question which led ASTHA to the making of the sound slide-tape *Khel Dori Ka* (Puppets on a String) was of a completely different kind. Put very simply, it asked: *Can a concrete, folksy medium like puppets put across abstract ideas on society and communications?* Puppetry was seen to be effective in entertaining and welding a group together. Could it be equally effective in teaching abstractions?

The Background: Reactions to Audiovisuals

Over the last four years, ASTHA has crafted a number of sound-slide programs on roughly three topics—Work and Employment, Health, and Myth and its Relation to the Present. Through a series of screenings and discussions on the shows, mainly with working-class people in Bombay's slums and tenements, a composite reaction to the shows emerged. Writing in the ASTHA newsletter, the audiovisual producer Anjali Monteiro observed,

> The people are obviously used to thinking in terms of 'messages' which are given to them in a classroom situation. Given this fact, they expect to be 'told something,' moralised at. Therefore the slideshow is somehow twisted and made to yield messages which have only tenuous links with the actual slideshow itself.

The screenings also brought ASTHA face to face with practical problems from the animators. Perhaps because most of the animators came from a classroom background of the traditional kind—many were teachers in the formal school system—they stuck quite rigidly to the classroom situation with all its overtones of authoritarian discipline. Most felt quite secure in this kind of situation. No dialogue, no discussion. Just a question-and-answer session.

> —Did you learn anything new from the slideshow, *A House Servant?*
> —No. We already knew about a domestic servant's life before.
> —Doesn't it help to show something like this to the menfolk?
> —Heh-heh! As if they'll change just by seeing it!

Or again,

> (to a group of young men who had kept quiet during the whole discussion)
> —Why didn't you open your mouth? Why didn't you say something?
> —How could we? How can we speak in the group unless our elders give us permission?

How to overcome such a pedagogy? How to tackle the pedagogy of defeatism and dogmatism, and substitute instead learning through participation and dialogue?

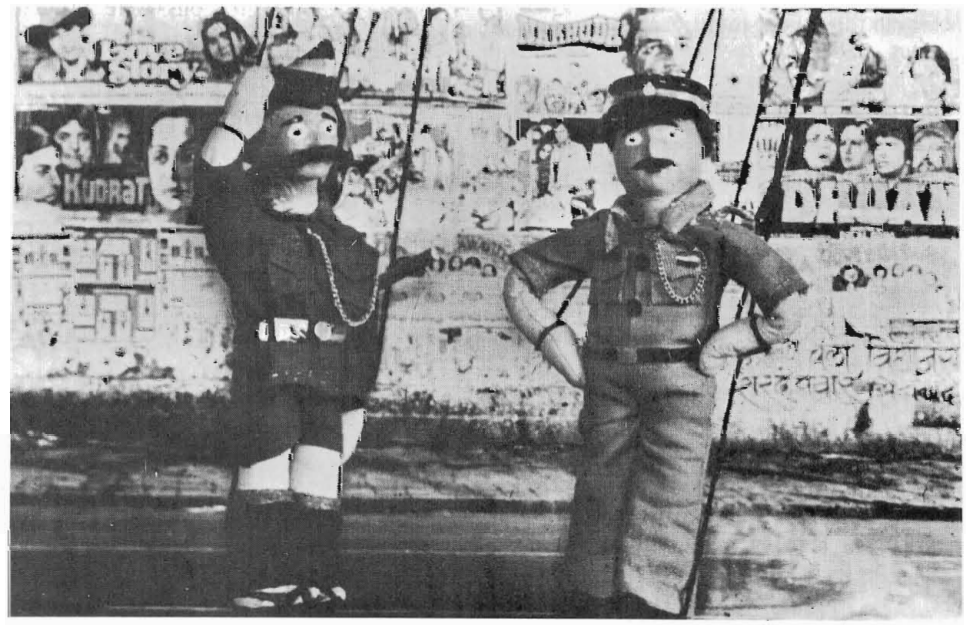
One way we might attempt this would be to depict the strata of relationships within society which contribute to such thinking. Oppression exists frequently in internalised form, never realised for what it is. And could an audiovisual slideshow attempt such a presentation in a more effective way than blackboard and textbook?

Thus the audiovisual *Khel Dori Ka* (Color, 52 sl/12 min.) took shape. It was conceptualised and scripted by Feruzi Anjirbag and photographed by Gerry Drozario. Ashok Kondhalkar designed the puppets, and Hriday Lani cast the dialogue.

Content and Form

From the beginning it was decided to use puppets as the chief players within the audiovisual, and to blend these 'mock' characters with scenes photographed from real life. Thus the visual form of the slideshow moves at two levels, that of the marionette theatre, and always in the background the easily recognised scenes (in black-and-white) of everyday city life. Similarly, the sound track, scripted in colloquial Hindi, the pidgin of the Bombay streets, moves at two levels: the interchange of puppets who present various scenes from everyday life, on the street, in school, at home and at work; played off against the racy, cynical comments of the

(continued on page 4)



Puppets in the slideshow play out their drama against a realistic city street background.

(continued from page 3)

sutradhar, a narrator-like figure, a court jester, whose barbed asides reveal the scene for what it really is. Interspersed in the soundtrack are also radio commercials and current pop (film) music.

Probably this is the place to comment on the need for a rigorous form of social analysis as an integral part of all communications study. No one disputes the need for skills in learning to use media, but without any kind of systemic analysis of media structures, the communicator either ends up politically naive or heavily moralistic.

Nor do we say that such issues are completely treated in the audiovisual under discussion. Like any other medium, the audiovisual has its strengths and limitations. One strength is the visual and graphic presentation which by its very nature is attractive and enlightening. If the slideshow has a weakness, it is that of form over content: what conclusions may one derive from the analyses?

Khel Dori Ka has been used at various levels and with varied audiences. Success has not been unqualified. One area which holds promise is ASTHA's participation in the curriculum for slum animators, taught in a local college of social work. The organizers of the curriculum wisely decided to involve media in the learning process, and not merely as "teaching aids." In earlier programs, the participants would have to dramatize or represent in visual form (through posters) topics on their syllabus. The plan is to go one step further. How to use the media itself as a source of information and reflection upon social reality, and how to express through media—from the simplest to more complex forms—one's grasp of abstract truths?

Herein lies the task of the artist—and we're using this term in the sense of all those who feel inspired to create, to translate into symbols their thoughts and feelings—even artists from a culture of deprivation, such as exists in the urban slum.

Our challenge is to build up a curriculum which would use as "texts" pop music and street language; film posters, newspaper photos, folk art, hand-made slides; and puppets, of different kinds and in different situations. An ambitious program, of which *Khel Dori Ka* is the first hesitant step.

Wherein lies the fascination of puppetry? Perhaps in that marionettes have a human face and a human gait. They both manipulate and are themselves manipulated. Just like us. And so they re-create in costume and caricature what we go through in real life, alas, with deadly seriousness. ■

Myron J. Pereira's present work includes designing a program in media education for high schools; directing a project in the mini-media related to development (ASTHA); and administering the network of Jesuit communicators in India.

For further information contact the author at Xavier Institute of Communications, St. Xavier's College, Bombay-400 001 India.

Khel Dori Ka: A Selection

(Most of the visuals take place at two levels, the actual scene with its players, and secondary remarks of the *sutradhar* [narrator/jester] which are always scathing asides.)

Visual		Script
a classroom	*Teacher*	Four times four is sixteen
	Pupils	Four times four is sixteen
pupils' faces		Four times four is sixteen
	Teacher	The capital of India is New Delhi
	Pupils	The capital of India is New Delhi
		The capital of India. . . .
	Sutradhar (v.o.)	Mere parroting, this seems to me. Notice the positions of the teacher and the pupil. The teacher stands.
teacher standing		The pupils sit. The teacher decides, "Today we will study why plants are green. . ."
		As Paulo Freire says, Our education suffers from 'narration sickness.' It's the teacher alone who acts. The pupils only have the illusion of acting through the teacher. . .
	Teacher	What's the capital of India?
pupils speaking	*Sutradhar*	Ha, Ha! Will any pupil challenge her? Say that the *real* capital of India is Bombay?
	Pupils	(in chorus) . . . is New Delhi.
close-up picture of sutradhar	*Sutradhar*	And the pupil becomes a young man. And then a parent. And maybe a teacher. On and on, he'll say, "Four times four is sixteen. The capital of India is New Delhi." He's been domesticated all right. Tame.
		Look at this scene now.
A slum setting. Crowd sitting in front of a social worker.		Let's listen to her speaking.
	S. Worker	All of you have two alternatives.
Social worker and crowd	*S. Worker*	You either get a new committee started, one you can trust, or continue living in the same dirty way. Don't expect me to do things for you. I'm here only to help you. Understand? *Help* you.
	Crowd	(No reply)
	S. Worker	So don't blame me or anybody else. It's *your* choice. Either choose a new committee, or carry on in the same way. . .
	Crowd	(No reply)
	S. Worker	I can only *help* you. . .
	Sutradhar	Oh yeah, oh yeah! Notice how the subtle manipulation goes on "I'm only here to help you." But I *do* tell you—either this or that. Free choice? But you *have* to choose what *I* prescribe.
		Oh dear! Aren't we always making up their minds? Deciding what's good or bad for them?
		Aren't we all guilty of playing the puppet game? ■

The Communication Process:
Why Communication Must Be a Two-way Exchange

by Dr. Romeo H. Gecolea

Communication has been defined in various ways, but most simply it is the process of sharing ideas, feelings, or attitudes.

One useful way of viewing the communication process is through what is known as the "SMCR Model." This term refers to the first letters of the basic components of the communication process, namely: Sender, Message, Channel, and Receiver. These components are always present when communication takes place.

However, for those involved in communications for rural development, these components are not adequate. There is one other very crucial component in the communication process: Feedback. Without feedback, it is not possible to determine whether one has communicated effectively.

Development communicators must always have a goal. For this reason, communication must always be thought of as a two-way process. The good communicators are those who are sensitive to feedback. The best communicators are those who study the components of the communication situation and ensure that they will get the feedback they want from before they fashion and send their messages.

Sender

To take a closer look at each of the communication components, it is worth starting with a familiar little story.

Let us take the case of a field-worker assigned to a village. He is young, enthusiastic, fired with missionary zeal. He goes to the village determined to lift the rural inhabitants from the quagmire of poverty. So he sees Farmer A and asks him to try the newest high-yielding rice variety, HYV747, otherwise known as "jumbo rice." He tells the farmer about applying fertilizer and agrochemicals as well as telling him about weeding, water management, etc. He does the same for Farmer B, Farmer C, and Farmer D.

Then a brilliant idea strikes him. Instead of talking to the farmers individually, why not call all farmers in the village to a meeting and teach them about modern farming there? So he announces to the villagers that he will hold such a meeting at 7 o'clock that evening. Of the 100 farmers in the village, only 30 come. But of the 30, 15 fall asleep halfway through the discourse on pest control. Of the 15 who somehow stay awake, five finally agree to try HYV747 in their fields. Of the five who try the new rice, two do not follow the recommended cultivating practices and one almost destroys his entire HYV747 crop because he mistakes a herbicide for an insecticide.

After four cropping seasons, rice production in the village remains virtually the same as its was four seasons earlier. However, the young field-worker no longer has the same enthusiasm. His missionary zeal has all but fizzled out; he now suspects that farmers in general are resistant to change, lazy, and truly stupid. "Why, HYV747 can yield twice or even three times as much as their traditional varieties! Yet they don't listen to me!"

This story involves rice technology. But perhaps the same thing happens to field workers who deal with programs concerning farm credit, irrigation, cooperatives, or family planning. The fact is that very often what we want to achieve falls far short of what we actually accomplish. Why?

The reasons are many, and not all of them have to do with communications. However, let us examine each of the components in this communication situation to find some answers directly related to communication.

Receiver

It is quite likely that the field-worker in the aforementioned example forgot rule No. 1 in effective communications: "Know your audience." He assumed that because HYV747 yields much more than ordinary varieties, it could be expected that farmers consider it perfectly rational—just as the field-worker considered it rational—to adopt the new variety. However, the results of his effort prove that he did not have an accurate picture of farmers in that village. Were farmers really interested in increasing their rice yields through a new variety? Which farmers were interested, and why? Which were not, and why not? What is the best time of day to hold a farmers' meeting? Obtaining answers to these and other questions should have been part of the preparatory work undertaken by the field-worker before he charged ahead with his "jumbo rice."

Making assumptions about the intended receivers of our message is a risky proposition. This is particularly true of farmers, who are probably among the most misjudged groups of people, at least by those who plan and implement rural development programs. We often use our own values and standards to judge how farmers will react to our messages, instead of first finding out their values and standards for making decisions.

Message

This brings us to the message that our field-worker tried to communicate: "Plant HYV747." This may have sounded simple enough to him, but what are the actual implications to the farmers?

HYV747 really represents a package of new practices involving heavier use of fertilizer and pesticides, measured spacing between plants, a sure supply of irrigation water that can be precisely managed, and intensive weeding. Are all these inputs available? Is the money needed to use them available? Even if all these inputs are available, how reliable is the field-worker's assurance to farmers that yields will double?

In most rural development programs, the objective is often to get farmers to adopt technological innovations. Communicators and extension workers sometimes forget that anything new entails risks. These risks often involve the very survival of subsistence farmers. If "jumbo rice" fails, not only does the farmer lose the cash he has invested in inputs, but he loses his supply of staple food for the season or the year as well.

Rural communicators have to realize that farmers are generally resistant to change for very good reasons. Traditional practices may be inefficient in our view, but they have served generations of rural families reliably. Unless the new practices that we propose in our messages prove to be better and at least as reliable, there is no point in trying to get farmers to accept them.

Channel

Let us assume that our field-worker did his homework in finding out about his audience and that he has determined that HYV747 is a better, more feasible and reliable type of rice. Yet only a handful of farmers attended his meeting and very few actually planted the variety he recommended. Such poor results could be due to the poor or inadequate communication channels he used.

Words make up our most common form of communicating, but they are also sometimes the least efficient. This is because meanings are not in words, they are in people. Stated another way, the same words can hold different meanings and connotations for different people. In fact, in the case of technological innovations, a lot of words may have no meaning at all to farmers.

Only 30 of the 100 farmers in the village attended our field-worker's meeting. The reason perhaps may have been due to a lack of publicity, but it probably was because the farmers knew it would be a long, boring session where the field-worker would talk and talk. Like any of us, farmers do not exactly enjoy listening to a long speech on a complex subject, especially after a hard day's work. In our story, the farmers' fears were apparently well founded since 15 of the 30 who attended fell asleep.

Everything could have turned out differently if the field-worker had not relied on words alone to tell his farmers about HYV747. For the announcement of the village meeting, he could have improvised simple but informative posters; he could have used school children to inform their parents; or he could

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Microcomputer-based Information:
Big Rewards for Small Agencies

by Gary Garriott

Debates rage on whether the advent of the information revolution made possible by the falling costs and increasing power of microelectronics technology will have a net positive or negative effect on developing countries. Disagreements on whether microelectronics have really anything to offer the poor are even more pronounced. For example, nonprofit agencies such as private voluntary organizations and church-related groups (reportedly as many as 300 in Kenya alone) provide significant levels of development assistance, yet often cannot avail themselves of the benefits of computer power.

A Washington DC (USA) consortium provides a possible model for effective use of a microcomputer as a self-sufficient information system. The Washington Council of Agencies is made up of over 100 small nonprofit organizations which pay a membership fee based on each group's annual operating budget (typically in the US$50,000-250,000 range). Besides advocacy functions, the Council provides support services to its member agencies that if done individually would consume significant amounts of time and financial resources, which small organizations often cannot afford. A microcomputer with "floppy" disk drives, a "hard" disk mass storage device, two CRT (cathode ray tube) terminals capable of being used simultaneously, and a printer are employed to provide a variety of information services including the management of mailing lists, maintenance of skills banks, compilations of contributions made and of other reports and directories, bulk mailings, word processing for repetitive letters and newsletters, and a dues and subscription service. Accounting packages are being developed. For these services, member agencies pay a fee that is below the typical commercial rate, but above cost. Nonmember organizations can also contract for these services; two to five new accounts are added monthly.

The result is that income generated from these microcomputer-based information services averaged about 25 percent of the Council's total revenues during the first six months of 1982. This is expected to more than double by the end of the year. The Council reports few start-up and implementation problems with the system. Adaptation of commercially available "user-friendly" software was performed by a local software house. Two years ago the system cost approximately $18,000 including software development; the same set-up today would be 10 to 15 percent less.

The Council deals with psychological resistance to computers by encouraging potential users to come to its facility to see the equipment in operation or to even operate it themselves. They will also arrange demonstrations held at the member agency's convenience. The Council offers discussion seminars for newcomers, covering computer terminology and concepts, microcomputer information applications for organizations, as well as guidelines for evaluating microcomputer systems. Most data to be processed is either brought personally to the Council's office or sent through the mail, though eventual data transmission via telephone is contemplated once a number of agencies have acquired remote terminals. In fact, the Council is supportive of the concept of microcomputers networking together instead of time-sharing their established system because of the added flexibility and independence provided to each member agency. Revenues probably would not be greatly affected since the number of organizations still requiring information services is likely be much greater.

A VITA Volunteer is a computer systems consultant to the Washington Council of Agencies. For more information on how the Council and/or the microcomputer information system functions, contact the author at: Volunteers in Technical Assistance, 1815 N. Lynn Street, Suite 200, Arlington, Virginia 22209, USA.

That modestly endowed groups are increasingly supporting these information services is an indication that the package offered saves them both time and money while simultaneously turning a "profit" for the consortium. Throughout the United States, half a dozen other consortia or agencies interested in supplying similar services are establishing their systems on the Washington Council of Agencies model. There is also a potentially greater indirect payoff in that nonprofits—notorious in both the US and abroad for their isolation from each other—learn that they can work together in certain activities for greater overall efficiency without compromising programmatic goals.

While a direct transfer of this concept to nonprofits working in developing countries should be possible, other variations would appear quite feasible as well. For example, enterprising individuals or small businesses could market themselves as "data management service bureaus" to the private sector as well as to government or parastatal groups. Database searching is an additional capability valuable for research and developmental units and the private sector.

The Washington Council of Agencies experience illustrates that the delivery of useful microcomputer-based information services is not the purview only of large database management firms, but that it lies also within reach of less sophisticated agencies and groups. ■

Gary Garriott is a Senior Technical Advisor at Volunteers in Technical Assistance and is currently coordinating microcomputer initiatives for that organization.

Reviews (continued from page 13)

- The Intergovernmental Bureau of Informatics (IBI) is concerned with professional applications of electronic information, and keeps careful track of trends through two publications, *IBI Newsletter,* and *Agora,* a journal for "Informatics in a Changing World." *Agora* devotes an issue to an area, such as informatics and agriculture, features articles on country activities, on the setting up of regional informatics centers, training programs, meetings and a calendar of events, legal issues, and educational applications. Much of the journal's focus is on the developing world, and it is available in English, French, and Spanish.

  For information regarding subscriptions to either the newsletter or the journal, contact IBI, Viale Civilta del Lavoro 23, 00144 Rome, Italy.
- *Prospects,* Unesco's quarterly review of education, has devoted much of its recent issue (Vol. XII, No. 3, 1982) to "Educational technology: myth and reality." Eight articles by well-known names in the field examine the current status of educational technology. A case study reports on the Cuban Radio Victoria de Giron's educational outreach to young people. Unesco's address is 7 place de Fontenoy, 75700 Paris, France.
- *Ideas and Action* (a joint publication of the Freedom from Hunger Campaign and Action for Development of the Food and Agricultural Organization of the UN) has issued a special double issue, #145 (in English, French, and Spanish) on "Rural Health." It has the particular purpose of calling attention to the failure, to date, to involve rural people in their own primary health care as part of the rural development process. Reports on community-based efforts in Peru, Guinea Bissau, and Yugoslavia appear; issues such as planning and management, pesticides, and financing schemes are featured. There is a helpful annex which includes resources and publications, information on common diseases, a list of basic drugs for rural health centers, basic sanitation principles, and guidelines for pesticide use. Issue #145 on Rural Health is available from Action for Development, FAO, 00100 Rome, Italy.

Reviewed by Judy Brace.

Printed Cloth Posters:
Practical Communications Tool for African Countries

by Beverly Emerson Donoghue

"While others try to reach the moon, we must aim to reach the village."
Julius K. Nyerere

Visual materials provide important support for communication, education, and training programs in Africa. Conventional media and print materials, however, are often scarce because of the reliance on imported supplies, technologies, and personnel from the developed countries. This paper examines an innovative educational medium—screenprinted visual aids on cloth—that was developed in Ghana. The rationale for printed cloth, the production process, and research and development efforts in Ghana and the Sudan are described.

Why Cloth?

Unlike paper and electric/electronic visual media, cloth is a familiar sight in both urban and rural areas of Africa. Everyday scenes of fisherfolk bringing in their catch, market women selling their wares, children caring for young ones—each is accented by colorful cotton prints that are manufactured by local textile factories, both large and small. Throughout the continent, there is a strong tradition of textile artisans, who often create striking fabric designs from the simplest tools.

Cloth is also a very durable material, and, unlike paper, will last a long time—despite the temperature and humidity extremes of Africa's wet and dry seasons. Whereas paper is "imported" both from other countries and from the city, cloth is a familiar commodity, and as such is much more "touchable" or "approachable" than paper. Cloth can easily be washed when soiled, and readily folded up and carried from village to village. People wear fabric, wrap their babies in it, and use it to carry all kinds of things. So why not let cloth carry educational messages as well!

In fact, several African countries have had fabric printed to illustrate and promote slogans for national campaigns—such as "Operation Feed Yourself" in Ghana and "Healthful Foods" in Tanzania. When worn, these brightly colored designs become walking posters for everyone to see. The use of printed cloth designs as visual communication tools simply carries the textile medium one step further.

The Production Process

The simplest method for printing large designs on cloth is silkscreen printing. The actual stencil is a very fine mesh screen fabric stretched tightly across a rectangular wooden frame. Open spaces in the screen are the design areas to be printed, with the rest of the screen sealed with lacquer, gelatin, or film to prevent ink from passing through.

The basic equipment—screen frame, printing blade, and long printing table—are constructed mainly from wood. Local materials can satisfy most, if not all, printing supply needs. Most of the labor can be performed by unskilled workers, who can be given on-the-job training in manual screenprinting methods. The labor-intensive printing process is particularly appropriate for developing countries, whose greatest potential resource is the large pool of untrained and under- or unemployed workers.

The production sequence is as follows:

1. After the design is pretested and revised, each color is transferred onto a separate screen. This can be done several ways—with paper for large areas of color; with lacquer or a knife-cut film; or with a light-sensitive gelatin or emulsion for highly detailed designs. The method used will depend upon the available supplies, the complexity of the design, and the number of prints or copies needed.
2. The design is then screenprinted on cloth: when dyepaste or ink is spread across the screen with a rubber blade, the paste goes through only the open parts of the screen stencil onto the cloth below. Each color is printed down the length of the cloth.
3. After the printing of all the colors, the printed cloth is removed and dried in the sun, then usually ironed to help bind the dye or pigment to the cloth.

Research and Development Efforts

Because the printed cloth medium seemed to be such a natural one for the African setting, a prototype development project was organized in Ghana in 1974 to test the technical feasibility of printing large educational designs on cloth, to find out how acceptable the cloth medium would be to educators and extension personnel, and to determine the production costs involved. With the assistance of private educational organizations, private industry, and government agencies, Ghanaian art students designed and printed on cloth four-color illustrations of the eye, the digestive system, and a physical map of Africa. The periodic chart of the elements and the life cycle of schistosomiasis were also printed. The response from teachers and educators both in Ghana and in other African countries was a unanimous preference for the cloth-based visual aid over conventional paper ones. Printed cloth designs were seen as one of the few communications media that could in fact "reach the village."

Silkscreen printing was found to be economically feasible if done on a mass-production scale. Based on a minimum order of 2,400 copies of a design approximately 1 meter by 1.7 meters, preliminary cost estimates made in Ghana indicated that these could be printed for less than US$3.00 each. Because cloth was readily available locally and because the cost of imported inks and stencil materials was only a tiny fraction of the overall cost of materials, the production figure was considered quite reasonable.

Since 1974, with frequent shortages of all kinds of goods, there has been an even more urgent need in Ghana to develop products from local materials. Accordingly, an in-depth feasibility study and workshop on textile visual aids was jointly sponsored by the Ghana government and the U.S. Agency for International Development in 1980. The purpose of the study was to assess the demand for visual materials on cloth; to determine the availability of necessary supplies; to update production costs; and, if found to be feasible, to recommend organizational options for the development and production of printed cloth materials.

A 10-week workshop on Textile Visual Aids was provided for representatives from the Ministries of Education, Agriculture, Health, Information, and organizations associated with nonformal education and family planning. Participants designed, pretested, revised, and printed illustrations on several topics: raising rabbits for food, eating a balanced diet, making oral rehydration fluid, preventing diarrhea, family planning for women, family planning for men, and village scenes for language learning in primary schools. The ministries were not only pleased by the cloth posters designed for their use, but also wanted to have several of the illustrations designed for other ministries.

The visual aid needs of various sectors were found to be quite large. There were over 7,000 primary schools and over 4,000 middle schools in Ghana. The Ministry of Health wanted to have at least 5,000 copies of designs on several topics. The Home Extension Unit of the Ministry of Agriculture, the Ghana National Family Planning Program, and the Mass Literacy Campaign by the Department of Social Welfare and Community Development were other nation-wide extension programs which needed durable visual materials. Because of the durability of cloth, agency officials gave US$3.66 to US$5.50 as a reasonable price for each textile print.

Production costs were determined for a private textile printing factory and for a production unit at a training college with printing facilities. With a minimum order of 1,000 prints, the cost per print from a private firm was US$2.28. If done by the production unit, the cost would vary from US$1.86 to $2.74, depending upon the quality of cloth used for printing.

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A Communicator's Checklist

1 *Tradition for Development: Indigenous Structures and Folk Media in Non-Formal Education,* edited by Ross Kidd and Nat Colletta (German Foundation for International Development and International Council for Adult Education, 1981), 639 pp.

Developmentalists often perceive local culture as an obstacle to be overcome. *Tradition for Development,* a collection of 18 papers from an international seminar on "The Use of Indigenous Social Structures and Folk Media in Non-Formal Education and Development," challenges this presumption. The book makes the case that there is a positive role for indigenous structures and cultures in the development process.

By dividing the book into three sections, the editors provide some focus for an uneven variety of papers. The first section examines the authority of folk institutions and processes. It reveals, for example, how indigenous organizations for water distribution, schooling, village-level politics, or such deeply rooted values and customs as the GOTONG ROYONG, an Indonesian self-help system, can support development. The second section treats the use of traditional performing media, like folk theater, to extend development to social groups normally outside the modern communication network. The final section presents several brief reports from a debate over how best to exploit the influence of indigenous culture.

Because of the way in which it documents the insights gained from working with local culture, this book should be a welcome addition to the developmentalists' library. Many specialized bibliographies enrich the book. The sections on traditional structures and folk media have helpful introductions. Other papers identify intriguing features of folk society. Yet, each of the 18 papers tends to explore only those ideas that arise from its particular experiences.

Although the indigenous group is a special form of social organization with certain kinds of structures and processes, these papers lack a broad framework for their ideas, a clarification which would have been useful to the general reader. Here modern folklorists might have been used to clarify some key ideas on the nature of folk culture, its structures, its functions, its limitations, and its relationship with other social groups. However, the failure to discuss such crucial concepts may be a product of the immaturity of the issue rather than a particular shortcoming of the book.

In the final section, two contrasting development strategies found in the earlier papers are summarized. The first approach, that of the instrumentalists, utilizes folk media as another technique for presenting the usual development messages—health, sanitation, literacy, or farming. The development process is under the agents' control but indigenous structures are drawn into its service. The alternative approach, that of the structuralists, entrusts control over development to the local group. This creates an opportunity to avoid the inhumanities that structuralists see in existing social structures. Their goal is to transform this power into a base camp in the struggle for class freedom. While no synthesis of ideas is attempted, these arguments are valuable as an introduction to the major ideological preferences found in this area.

Even though some of the papers in this book may fail to use reliable notions of folk culture in generating their development strategies, studies in this area are hard to find and worth reading. Furthermore, the wide range of ideas found in these essays should serve as an important starting point for analyzing the full potential local cultures hold for the development process. ■

Reviewed by Terry O'Connor, a doctoral student in comparative education at the University of Virginia.

Available from the German Fund for International Development, Simrock Strase #1, 5300 Bonn, GDR.

2 *About Understanding—Ideas and Observations on Cross-Cultural Communication,* by Andreas Fuglesang (Sweden, Dag Hammarskjöld Foundation, 1982), 231 pp.

About Understanding could be sub-titled: "What every good development communicator ought to know." The title suggests the theme of the book is understanding; actually, it is about "making meaning," or the process of arriving at a cognitive state of understanding. Every human being is a meaning maker, actively seeking to comprehend the situation or context he or she is in, using as tools whatever knowledge and experience his or her own culture has offered.

To understand communication initiated by another requires that a common context between sender and receiver be first established so that the meaning intended is the meaning made. In some cases this common context is established only by great effort of the sender. This is especially true for a development communicator. The culture of the audience has already supplied a meaningful world and the audience's preconceived ideas of reality have long since fostered a tradition of appropriate behaviors. The new information put forward by the development communicator may seem to the listener gratuitous, if not meaningless.

Fuglesang admonishes, "People in cultures may have useful ways of communicating, of which we are unaware." Anecdotal evidence, sensitively portrayed, supports this admonition. Fuglesang examines the cultures of African tribal people through their social structures, the nuances of their languages, and their verbal traditions. He writes with benign humor, and he clearly respects the African villagers he writes about.

Fuglesang traces the development of forms of representation—systems of accounting for crops and livestock—which evolved into the written word. Later, he avers that representation is the root of "digital communication" which is a Western literate invention. As counterpoint, he asserts that "analogical communication" is prevalent in the examples given about the African villagers. His purpose in introducing these concepts is to question a Western notion that literacy and hence digital information processing is the prerequisite for desirable social transformation. The book does not need the digression into digital information processing, a fuzzy construct of cognitive psychology, to reinforce the contention so poignantly made by describing the perceptions and the experiences of the villagers themselves.

The chapter on village education is a superior reminder of what a development communicator's task really is: to begin at the learner's understandings and to use methodologies consonant with how other culturally related knowledge is learned. The two chapters following highlight relevant research in visual perception and summarize Fuglesang's research in understanding visual communication. Fuglesang's insights are valuable to anyone working in the field of visual communication, from development to advertising. The penultimate chapter on the uses of visual media to change health practices is study in practical applications of the fo going theoretical foundations.

Throughout the book, Fuglesang jars the Western reader by suggesting that the "sacred" traditions of scientific method and Aristotelian logic are no more valid a way of processing information than the "magic be-

havior" of some African villagers. However, in his enthusiasm for making a case for the cognitive integrity of the villager, Fuglesang may have been judgmentally harsh on members of Western societies who equate civilization with Doric monuments or who are entrapped by logical, analytic thinking. If the undercurrent of the book is that we all make meaning with whatever the building blocks of our culture are, then the Westerner should be as entitled to cathedrals or calculus equations as the African villager is to witchcraft or legends.

Finally, the book is an eclectic and not a scholarly work. To make certain points Fuglesang draws upon the Whorfian hypothesis, the information processing paradigm, or Gestalt psychology. Academically, these theoretical constructs make strange bedfellows. It is easy to forgive Fuglesang, however. He is tackling a conceptual problem that is larger than traditional Western psycholinguistics or cognitive psychology; he is attempting to make meaning of how individuals of disparate cultures make meaning. With that as its purpose, *About Understanding* is a book well worth reading. ■

Available for US$12 (prepayment by banker's check requested) from the Dag Hammarskjöld Foundation, Övre Slottsgatan 2, S-752 20 Uppsala, Sweden.

Reviewed by Julianne Gilmore of the Office of Education, Bureau for Science and Technology, AID, Washington.

3 ***The Popular Performing Arts, Non-Formal Education and Social Change in the Third World: a Bibliography and Review Essay,*** by Ross Kidd (The Hague, Centre for the Study of Education in Developing Countries), 127 pp.

Almost single-handedly Ross Kidd has pushed the reluctant and ignored folk media onto the stage of development communication, and insisted that attention be paid to their performances there. What we have seen should not surprise us. The popular arts are intrinsically endowed with the appropriate voices to reach their grass-roots audiences, and can absorb an infinite variety of messages for "communication, learning, popular expression, organization, and popular mobilization in Third World social transformation programs." More and more we hear of song, dance, drama, and puppets being adopted as message carriers in every corner of the globe. Trying to keep tabs on all this activity has been difficult. By their very nature, these are elusive performances.

As well as writing extensively on the popular arts himself, Kidd has assiduously collected references, documentation, and experiences which he has assembled into an almost 2000-item bibliography that the Centre for the Study of Education in Developing Countries in the Netherlands has published.

Kidd's information search broadened from an initial development/adult education base to include any *conscious* application of the performing arts to social change, and these various uses are outlined in a well-ordered prefatory essay. Such activities as Mexico's socio-dramas presented by the National Board of Family Welfare, India's mobile puppet troupes in support of life insurance and savings campaigns, Mali's community solidarity theater, and Barbados' black consciousness theater of identity, are sketched, and a reference to their bibliographic listing given.

The kinds of programs, their purpose, animating spirit, content, audience, and other characteristics, are charted so as to illustrate the analytic framework that Kidd developed. There is a particularly useful index, broken down into countries and regions, kinds of programs (i.e. Literacy, Women's Groups), research and evaluation, kinds of performance, and a seemingly skimpy subject matter category.

The bibliographic references themselves are comprehensive, clear, and concise. As with all such references, there is inherent frustration: "How do I get a copy of . . . ?" We must not, however, burden Kidd with these frustrations. He has done a superb job, and we are all in his debt. ■

For information on this Bibliography No. 7, and other publications of the Centre for the Study of Education in Developing Countries, write to CESO, Badjuisweg 251, P.O. Box 90734, 2509 LS The Hague, Netherlands.

Reviewed by Judy Brace, Acting Director and Resource Center Manager, Clearinghouse on Development Communication.

4 ***Manual del Arquitecto Descalzo (Handbook for the Barefoot Architect),*** by Johan van Lengen (privately printed; to be published by Editorial Concepto S.A.), 287 pp., in Spanish.

Handbook for the Barefoot Architect is a profusely illustrated (with attractive line drawings), comprehensive guide to construction of low cost shelter and community buildings in areas beyond the reach of the seasoned professional architect. The introduction defines the "barefoot architect" as the person who designs and builds structures in a community or directs a group which has decided to build a larger structure for the public benefit. As the barefoot doctor needs to understand simple medical procedures, the indigenous builder should know the basic techniques of modern construction. Armed with this information and with knowledge of local customs and preferences, he or she is then able to assist clients in obtaining a superior product.

The *Handbook* includes chapters on design, building materials, construction, water, waste disposal, and energy as appropriate technology (wind and solar). There are also individual sections describing variations in design and construction in wet tropical, dry tropical, and temperate climates. The manual is not a cookbook with "recipes" for particular structures. Rather, it explains principles applicable to the building process and trains the individual to think creatively in a range of situations.

This educative approach is one of the strong points of the *Handbook*. The author is also to be commended for minimizing the use of overly technical language and for presenting the material in a logical sequence. The level of detail of each chapter is neither so general as to be valueless, nor so specific as to overwhelm. At times however, there are long sections, such as the discussion of urban planning, which may not be pertinent to the intended audience . . . And herein lies the problem.

". . . it explains principles applicable to the building process and trains the individual to think creatively . . ."

The *Handbook,* which was developed in Mexico, is not so much a field manual as a training aid for young professionals (mostly in government) who would, in turn, instruct local artisans. While architects and engineers who attended a first seminar in Baja California in Mexico were enthusiastic about improving the skills of indigenous builders, in the main they were unable to complete the course because of other demands on their time. The *Handbook,* then, was designed to accelerate future training.

While it is a valiant effort, the *Handbook* is aimed at a formally educated audience and would be incomprehensible to the typical indigenous builder. Even the so-called "barefoot" paraprofessional would require extensive training in architecture and in teaching techniques before using the manual. The young professional group might benefit most from the *Handbook* and, thereafter, train the others. However, a subsequent evaluation of the first group attending the course showed that despite their participation, they were unable to spend time in the field since their scarce skills were required in the central offices of their agencies. One is left with the feeling that the *Handbook* is a good work in search of an audience. ■

Available (write for price information) from Johan Van Lengen, Av. Eugenio Sue 45, Mexico 5 DF, Mexico.

Reviewed by Dave Olinger, Assistant Director for Urban Development in AID's Office of Housing and Urban Development.

Time for a New Approach To Population Communication

by John L. Woods

During the past 12 years large amounts of money and effort have been invested in Population Communication or IEC (Information, Education, Communication) programs. What have been the results? Are they worth the money being invested? This article suggests that it is time to reorient many of the existing Population Communication programs towards helping strengthen service delivery capabilities in national family planning programs.

Recently, the Bangkok-based United Nations Development Program (UNDP) Asia and Pacific Programme for Development Training and Communication Planning (commonly called DTCP), with the help of the East-West Center in Honolulu, completed a comprehensive review of its work in helping rural development projects be more effective. This review covered 41 government rural development projects in 12 Asian countries which had received assistance from DTCP. These projects were in family planning, health, agriculture, and similar fields. Even though DTCP had also assisted these projects with their training methods, evaluation, and planning/management components, this article focuses only on the conclusions that relate to Population or Development Communication programs.

The DTCP review revealed a number of questions related to the role of Population Communication within national family planning programs. In the Asia and Pacific region a primary emphasis of Population Communication programs is on delivering messages to family planning target audiences. The major assumption behind this approach is that "communication" is the key element to getting people to adopt family planning practices.

In the early days of family planning programs, this focus on direct communication was useful for creating an awareness among the target population. In many countries, these educational campaigns have been highly successful, with levels of contraceptive awareness now approaching 100 percent. Therefore, a continued major emphasis on creating awareness among these target audiences is often no longer needed. What, then, is needed?

The DTCP experience has shown that a major constraint in many family planning programs, particularly in the rural areas, is poor service delivery. The availability of basic health services, contraceptive supplies, and other aspects of service delivery are often dreadfully weak. This has been recognized by many family planning administrators and highlighted in many evaluation studies. Dr. Nafis Sadik, Assistant Executive Director of UNFPA, has often written about the need to strengthen service delivery capabilities.

Communication campaigns without adequate service delivery capability cannot create successful family planning programs. In fact, this approach can cause frustration and even resentment towards government programs. Therefore, the DTCP review concluded that there needs to be a new look taken at the role of Population Communication. Specifically, more emphasis is needed on using Population Communication to help strengthen the capability of family planning organizations to deliver better services.

A key element in service delivery is well-trained and motivated field-workers. A Development Support Communication approach (commonly referred to as DSC) is needed to achieve this. The key to the DSC approach, as it has evolved during the past few years of DTCP work, is the utilization of communications resources to first help strengthen the service delivery infrastructure and then, second, to encourage the target groups to use these services. In practical terms, this means using Population Communication resources (or units) to help do the following:

1) improve the quality of staff training with relevant reference manuals, teaching aids (printed and audiovisual), and continuing education materials such as technical reports and self-study materials;
2) increase the effectiveness of the field, workers' education/motivation efforts through the production of appropriate lecture aids and handout materials;
3) implement more effective "management information programs" including newsletters, meetings, and other activities so that administrators can more easily communicate to their staff (this includes providing effective mechanisms for the staff to "feedback" vital information to the administrators);
4) continue direct communication efforts to the target audiences, but in a way that is coordinated with, and is an integral part of, the basic family planning program (as should be the above elements).

Reorienting Population Communication programs will require some effort by both family planning administrators and communication specialists. Family planning administrators must recognize that Population Communications is an essential tool within their overall planning and management activities. Initially, administrators themselves may need some assistance or training in how to do effective DSC planning and implementation. The crucial decisions of when and how Population Communication will be used must be the responsibility of the family planning program administrators.

Communication specialists must be willing to work as a team in the planning and implementation of family planning programs. Many of the communications specialists working in family planning have academic backgrounds in mass communications which partly explains why many IEC (information, education, communication) programs focus on mass media awareness/motivation campaigns. Therefore, these communication specialists may need additional training in development program planning, education/training methodology, management communications, and other related fields in order to introduce the DSC approach.

It is significant to note that in the term DSC the word "Development" comes first. All elements of the basic development program—technology, supply inputs, field staff, training programs, etc.—must be present before there can be any meaningful communication activity. The word "Support" is the key to the DSC concept; Communication is a resource which development planners and administrators can draw upon to support their central program, particularly the service delivery.

The DTCP experience has shown that many countries in the Asia and Pacific region need to begin reorienting their approach to Population Communication. It is time to broaden the focus of these communication programs. Rather than concentrating on direct education/motivation communication efforts to target audiences, it is time to begin using more of these communication resources to strengthen the service delivery infrastructure. By following the DSC approach, Population Communication can be an effective tool to help national family planning programs to be more successful. ■

A full report of the review done by DTCP is available through UNFPA or UNDP Representatives, or directly from DTCP, P.O. Box 2-147, Bangkok, Thailand. The title of the report is "Making Rural Development Projects More Effective: A Management Systems Approach."

John L. Woods is Director of the United Nations Development Program for Development Training and Communication Planning in Bangkok.

Development Communication Report, published quarterly by the Clearinghouse on Development Communication, has a circulation of over 5,000. Subscriptions are available free of charge to readers in the developing world.

A center for materials and information on important applications of communication technology to development problems, the Clearinghouse is operated by the Academy for Educational Development, a nonprofit planning organization, and supported by the Bureau for Science and Technology of the U.S. Agency for International Development as part of its program in educational technology and development communication.

Readers are invited to submit typed manuscripts of no more than 1000 words, and to send in photographs.

Community Radio Thriving in Ecuador:
Otavalo Indians Running Their Own Show

by Kurt Hein

Major UN-sponsored media conferences, in Nairobi in 1976, Belgrade in 1977, and Quito in 1978, focused on the desirable goal of establishing more "participatory" media in the Third World. While a number of studies have examined individual programs and short-term, experimental projects, there is little evidence that much progress toward this goal has been made in the past five years.

A notable exception can be found, however, in Otavalo, Ecuador. Initiated in 1977, Radio Baha'i has come perhaps the farthest of any rural radio station in realizing the conferences' objectives of providing "access, participation, and self-management."

Radio Baha'i, owned by the Baha'i community of Ecuador, is a community station, established to serve the interests, needs, and tastes of the community in which it is located (selected for its high number of Baha'is). The Baha'i faith, based on the teachings of the ninteenth century prophet, Baha'u'llah, promotes the oneness of mankind, the elimination of prejudice, and the common foundation of all religions. There are Bajai's in more than 100,000 places around the world. Rural Indians comprise the majority of the Bahai communities of Ecuador and the neighboring Andean countries. Situated in Otavalo, Ecuador, a picturesque Andean town of approximately 10,000 known for its colorful Indian tourist market, the station's primary audience are rural Indians in the two major valleys surrounding Otavalo.

Typical of rural traditional societies, the Otavalo Indians are a people whose way of life is increasingly being eroded by the incursion of twentieth-century technology and values. Villages are experiencing a serious decline in population as young men and women leave for jobs in the urban centers; cultural values are being displaced by the heavy saturation of mediated messages and products from the urban centers; and even the traditional artisan craft, weaving, is undergoing a radical transformation due to the introduction of mechanized looms, synthetic fibers, and mass marketing. In the middle of this pressure for modernization are nearly 100,000 *campesinos,* indigenous peasants whose principal activity is subsistance farming. Obviously, owing to their limited economic resources, the Otavaleños are not a group to whom commercial stations direct their broadcasts.

Recognizing these factors, the Baha'is built the station for several reasons: first, to promote and maintain the value, dignity, and significance of the people and their traditional indigenous culture; second, to promote education, the delivery of social services, and the dissemination of basic development information; third, to serve as a voice for the community, enabling villagers within a 50-mile radius to exchange information, make announcements, and share news about important activities and events in the region.

To accomplish these objectives, several significant decisions were made. First, it was decided that Radio Baha'i would broadcast in both Spanish and Quichua, becoming the first Ecuadorian radio station to broadcast a major portion of its programming in the Indian's native language. (Indigenous people comprise more than 50 percent of Ecuador's total population.) At first, the station broadcast approximately 35 percent of its programming in Quichua. That has now increased to 50 percent, with a goal of 80 percent by 1985. Second, staff members were recruited from the local population. The majority of the staff are local residents, including the station's 23-year-old General Manager, a native of Otavalo. Approximately half of the staff are indigenous, coming from nearby villages to work regularly at the station. Only two of the indigenous staff are literate, and only one of them received any schooling beyond the first grade. Nonetheless, all staff members have been trained to create, produce, and edit their own programs. Each staff member, male or female, literate or not, knows how to operate all the studio equipment, including tape recorders, cart machines, turntables, microphones, and mixing consoles.

Programming decisions are made by the station staff. Each staff member makes regular visits to the *campo* (countryside) to conduct formative evaluation on the programming, often spending several days in a community to establish a good relationship with the audience, and to receive information about listeners' needs and preferences. Final programming authority rests with a three-member "Radio Commission," one of whom is an illiterate woman from a distant farming community. She has become somewhat of a local celebrity and has represented the radio station as the Mistress of Ceremonies for Otavalo's two largest annual festivals, one in celebration of the corn harvest, the other an indigenous music festival sponsored by the station. She also produces and moderates the station's most popular cultural program, a four-hour weekly show devoted to traditional music, legends, and information of interest to the rural audience.

Broadcasting in Quichua, playing traditional music exclusively, and airing programs aimed at maintaining traditional values has made Radio Baha'i the most popular station in the region. A recent survey conducted by the author indicated that a remarkable 94 percent of the potential audience listens regularly or occasionally to Radio Baha'i. This is especially impressive in light of the fact that more than 30 stations can be heard in Otavalo.

Suprisingly, the station is able to achieve this popularity, broadcasting 19 hours a day, seven days a week, on a budget of approximately US$50,000 a year. Composed primarily of rural villagers, the Baha'i community of Ecuador does not have an abundance of funds on which to draw. Instead, they rely on the dedicated, even self-sacrificing service of the staff, all of whom, essentially, are volunteers, receiving only a nominal subsistence allowance. Members of the staff usually cite the "intangible" reward of serving their people as the primary motivation for working at the station.

The equipment at the studios is quite modest; most of it is used, outmoded equipment acquired from the United States. In fact, the transmission facilities attracted the attention of the National Frequency Board,

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Members of the staff of Radio Baha'i Vincenta Anrango (l) and Juanita Perugachi (r) visit listeners in a rural community. Woman in center has offered her house as a listening center for the station's programs for children.

On File at ERIC

Reports from the ERIC (Educational Resources Information Center) files reviewed in this column discuss the planning and management of communication media and describe two information centers, one of which is considering computerizing its services, and one which already has computer resources. All are available on microfiche from the ERIC Document Reproduction Service (EDRS), P.O. Box 190, Arlington, Virginia 22210, USA. The first three are available in paper copy from IIEP Publications, International Institute for Educational Planning, 7-9 rue Eugene Delacroix, 75016 Paris, France. The first two are also available in French.

o McAnany, Emile G. and Mayo, John K. *Communication Media in Education for Low-Income Countries: Implications for Planning. Fundamentals of Educational Planning-29.* 1980, 80 pp. (ED 213 108)

This discussion of planning issues bridging education and communication in low-income countries addresses the democratization of educational opportunity, the quality of instruction and learning, the impact of education through technology on rural areas, and the participation of people in their own education. Evidence from four case studies of relatively successful applications of communication media for education and development is cited in the discussion of each of these issues. Three of the studies involved the use of radio: extended learning in the Dominican Republic, qualitative improvement of mathematics teaching in Nicaragua, and community action in Tanzania. The fourth study looked at the experimental use of satellite television broadcasting in India. The effect of the level of technology adopted and the context of its use on cost estimates is shown, and conclusions and recommendations for planners are given. Available from EDRS in microfiche only for 97¢ plus postage, or from IIEP Publications in paper copy.

o Gutelman, M. *The Use of Modern Media for Rural Education in Developing Countries—The Organisational Problems.* 1979, 51pp. (ED 213 114)

The first part of this report deals with inherent technical constraints on the various media, and the way those constraints affect providing school-age children with basic education. It also discusses methods of organization and problems of extending secondary and technical education in developing countries in light of the constraints on the media. Each of the major media is examined in terms of its potential range of use. The second part deals with questions relating to the overall organization and utilization of modern communication media in rural education. Unesco materials, discussions with special lists, and the author's own experiences provided the background for the report. Available from EDRS in microfiche only for 97¢ plus postage, or from IIEP Publications in paper copy.

o Chateh, Peter. *Documentation Centre of the Association of African Universities.* 1980, 23pp. (ED 214 545)

This report presents the results of a study of the Documentation Centre of the Association of African Universities (AAU) which was undertaken to work out proposals for the rational organization of the Centre, and to explore the possibility of computerizing the Centre and linking it with other centers which provide automated documentation services. The background of the AAU and its objectives are summarized, and its functions, staffing, holdings, physical facilities, and budget are discussed. Also described are abstracting, bibliographic search, and translation services available through the Centre. Major problems in the areas of personnel, holdings, equipment, and facilities at the Centre are reviewed, and the computing resources, personnel requirements, and costs involved in computerizing the Centre are described. A detailed list of recommendations for the more effective organization and operation of the Centre closes the report. Specific recommendations are concerned with printing services, the binding and publications service, the technical services department, the information and research service, inter-institutional cooperation, and the computerization of the Centre. Two charts are appended. Available from EDRS in microfiche only for 97¢ plus postage.

o *Supporting Innovations in Education: Preparing Administrators, Supervisors, and Other Key Personnel. Report of a Technical Working Group Meeting (Seoul, South Korea, September 29-October 11, 1980).* 1981, 94pp. (ED 214 229)

This meeting on methods of training educational administrators and supervisors to be supportive of educational innovation was attended by participants from 11 countries: Bangladesh, India, Indonesia, Japan, Malaysia, Nepal, Pakistan, the Philippines, South Korea, Sri Lanka, and Thailand. This report summarizes the proceedings of that meeting and the recommendations made for better training of key personnel involved in educational change. Presentations by the participants describe innovations implemented or suggested for bringing about changes in teaching and learning in their countries, especially in science and technology education; the current preparation of key educational personnel in each country is summarized, with special reference to new planning procedures; problems and issues related to the preparation of key administrative and supervisory personnel to support innovations in teaching and learning are presented; and recommendations are made for better preservice and inservice training of administrators, including national administrative institutes of education and advanced-level workshops. Available from EDRS in microfiche only for 97¢ plus postage.

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Cloth (continued from page 7)

Because of the overlapping visual needs, a textile visual materials production unit was proposed as a collaborative effort of interested institutions. This would prevent duplication of visual messages, and, thus, unnecessary expense, and promote production and use of cloth-based visual materials in a wide range of programs. The production unit system would offer valuable training to textile students, while producing attractive and *useful* educational designs. In addition, channeling resources out of the capital city and into a rural institution not only made use of existing facilities, but supported the stated government policy of encouraging rural development.

In the Sudan, the development of textile visual aids has been even more encouraging. A feasibility study sponsored by the World Health Organization in 1979 found that *all* of the materials needed were locally available. Cotton cloth was abundant and very inexpensive, making it a very appropriate visual communications tool. Gelatin glue prepared from animal bones was used to make the stencils. Women's veil materials were substituted for the imported stencil fabric. A paste made from sorghum starch and direct dyestuffs was used to make the printing binder.

WHO and the Sudan's Ministry of Health are following up on a proposal to establish a rural production center for printing textile visual messages for health education programs. It is possible that, once established, the production center may evolve into an income-generating operation for the village—printing cloth designs for many extension programs in the country.

Printed cloth materials are not offered as a panacea for the urgent communication and educational needs in Africa. Visual aids are clearly very helpful, particularly when combined with radio discussion groups and other participatory media. What is significant is the approach: rather than trying to transplant a communications medium from the West, the strategy has been to take advantage of the materials and resources that are available locally so that communication tools will be relevant for the learning needs, local resources, and cultural setting in African countries. ▫

For more information on printed cloth posters, contact Beverly Emerson Donoghue, Center for the Development of Non-Formal Education, 2109 East 2nd Street, Austin, Texas 78702, USA.

Briefly Noted: Publications of More than Passing Interest

Two small booklets, the results of gatherings of communication practitioners, are now available:

- *Community Communication* is the report of a workshop held in 1980 by the Indian Centre for Development of Instructional Technology. The workshop featured ways in which communication could be a catalyst in the community development process. Workshop participants studied the following examples: the Peruvian videotape project in support of rural development, broadcast TV for children and use of videotape in rural areas in India (*DCR* #35), and drama as a tool for community involvement and two-way communication. Films, video, and theater presentations were shown to demonstrate program resources. A point stressed throughout was that information becomes communication only when the mechanism for feedback exists. The Workshop devoted considerable attention to training in production methods. Choice of a medium, selection of an objective, identification of the audience, built-in evaluation—all the communication planning elements that can never be repeated too often—are restated here for the reader's benefit. The workshop's agenda and list of participants are included. The *Report on a Community Communication Workshop* may be requested from the Centre for Development of Instructional Technology, C11 Community Centre, Safdarjung Development Area, New Delhi 110 016, India.

- Sri Lanka was the site of a Symposium on Alternative Media in early 1982, hosted by the Worldview International Foundation. The proceedings—15 short papers—have been collected and make interesting reading by their diversity, although the theme of "alternative media" is not readily apparent. The speakers addressed such issues as film beyond entertainment, relevancy of the newspapers, educational TV, OPEC's information program, distance education, and India's satellite efforts. Arthur Clarke contributed a brisk review of the benefit of satellite- as opposed to costly new ground-communication for developing countries. The Worldview International Foundation, in sponsoring this symposium, appears to be building toward a media effort in support of proper nutrition to prevent xeropthalmia (nutrition-related blindness). The Symposium proceedings are available from Worldview International Foundation, 10 Kinross Avenue, Colombo 4, Sri Lanka.

- A new and valuable resource is now available to readers of *DCR:* a bibliography entitled "Using Pictures in Literacy Work," compiled by Bruce L. Cook. Cook has cited over 100 publications in English, Spanish, and French, that deal with literacy training and materials, visual perception, and field experiences. Some of his citations date back to the 1930s, testimony to the thoroughness of his research, but suggestive of the difficulties others may encounter trying to locate these references. As more and more educators recognize that visual perception reflects the cultural base of a society, they appreciate the need for careful evaluation of materials in each educational setting. The fine studies made in Nepal should inform the materials designer in Africa, but not replace local perceptual testing. The cartoon-like figures dear to Central American *campesinos* would probably have little influence in Papua New Guinea. The more specialists have access to the literature, the better the materials they develop will be. A bibliography such as this will assist the process substantially.

  Copies of the bibliography are available for US$2.00 prepaid, from the David C. Cook Foundation, 850 N. Grove Ave., Elgin, Illinois 60120, USA.

- Microcomputers are an important element of the contemporary communication scene, and many of those who work in or with developing countries are concerned that micros not be pushed into inappropriate settings with irrelevant software and inadequate training and maintenance. Any number of meetings have been held or are being contemplated to discuss applications and implications of microcomputers in developing countries. Developing country planners, researchers, program designers, project monitors, among others, will need to give thoughtful, informed consideration to their own actual and potential microcomputer applications. Some of the necessary information to make these judgements can be gotten from international publications that cover the field. The Technology Programme of UNIDO (United Nations Industrial Development Organization) is actively involved worldwide in microelectronic technical assistance, has put out a number of interesting working papers (some of which are available in Spanish), and publishes a very informative newsletter (in English), *Microelectronics Monitor.* The newsletter features news of UNIDO's own microelectronic assistance, country activities, industry developments, excerpts from other publications, market trends, and recent publications. News of microelectronic activity is solicited, particularly from developing countries.

  For subscription information, contact UNIDO, Technology Programme, Division for Industrial Studies, P.O. Box 300, A-1400 Vienna, Austria.

(continued on page 6)

Advanced Training In Rural Reconstruction

The International Institute of Rural Reconstruction is currently receiving applications for its 18th and 19th International Training Sessions to be held from February 16 to April 8, 1983, and from September 5 to 30, 1983, respectively.

The 18th Session, "Advanced Training in Rural Reconstruction," is for men and women responsible for implementing rural development projects of government and non-government agencies in the Third World. Conducted semi-annually, these sessions provide a forum for participants from Asia, Africa, and Latin America to study the history and philosophy of rural reconstruction, rural development strategies and issues, and to share experiences and methods for promoting participatory change and integrated development at the village level.

Candidates should be actively engaged in rural development, must be nominated by their organization, and have a minimum of three years' experience in managing rural development projects.

The course will be conducted in English and the cost (excluding international travel) is US$2,150. A limited number of full and partial fellowships are available to most deserving candidates.

Further information and application forms may be obtained from: J. R. Batten, Training Director, IIRR, Silang, Cavite, Philippines.

Radio (continued from page 11)

responsible for licensing the station, because of the unconventional equipment. The antenna is an original design that uses inexpensive aluminum irrigation pipe used in local agriculture. Despite initial scepticism, the broadcast license was awarded when government engineers found it to be the most efficient 1000-watt transmitter in the country.

Broadcasting in the local language, choosing local villagers as staff members, and placing a priority on content over technology have helped to make Radio Baha'i popular. In a future article, we will look at other reasons for the station's success, including a closer examination of its programming philosophy and production methods, its innovative local news program, audience participation in the programming, and special nonbroadcast cultural activities sponsored by the station. ■

For further information contact Marcelo Quinteros, Executive Director, Radio Baha'i, Apartado 14, Otavalo, Ecuador.

Kurt Hein served as the Assistant Director of Canadian International Development Agency's (CIDA's) Rural Radio Development Project in Otavalo. He is currently the Executive Producer of the Academy for Educational Development's Radio Language Arts Project in Nairobi, Kenya.

Nepal (continued from page 2)

falling under the authority of the Ministry of Forests are covered during this radio program, much emphasis is given to community forestry. Basic objectives of the community forestry component are as follows:

- to create awareness of the Community Forestry Development Programme (CFDP) and its benefits to the hill villagers;
- to create understanding of how the program works and the people's role in it;
- to remove any doubts about the program that hill people may have; and
- to create a 'bandwagon effect' for participation in the CFDP, i.e., to show that community forestry activities are taking place all over the hill areas.

The radio program is oriented towards field activities; that is, much of the content comes from or deals with people and events in the hill project areas. Voices and views of hill villagers are heard in the program as much as possible.

Other Media

In addition, other designs have been created to keep the program in the public's awareness. A logo, or symbol comparable to a trademark, was developed and is used on all printed materials to link them to the program. For further reinforcement, all staff working directly with the program on a continuing basis are issued T-shirts showing the project's logo.

A metal button showing the logo is issued to all senior and intermediate staff and will be given to junior staff and village leaders as an acknowledgement or reward for good work.

Towards a Coherent Forestry Extension Service

The Ministry of Forest and Soil Conservation is fully aware of the urgent need to build up a forestry extension capability. Efforts are already underway to establish a Development and Communication Support Section in the Ministry, which will help and serve the extension needs of all the agencies within the forestry sector.

A Training Wing in the Ministry has recently been created with the support of USAID. With a limited number of staff, this Wing is not designed to undertake a large amount of direct training. Rather, it assumes training management, coordinating, and clearinghouse roles. It will largely use trainers and other resources from within and outside the Ministry and works closely with the four technical departments in determining and meeting their staff training needs.

Outside the Ministry, meanwhile, Tribhuvan University's Forestry Institute is starting a diploma course in forestry and watershed management. Both the diploma course and the existing certificate course will include extension and relevant social science subjects.

As part of the ongoing monitoring and evaluation program of the whole project, an assessment of knowledge and attitude towards community forestry was made approximately two years after the program began. A survey of 900 households and 180 village leaders has shown a substantial, statistically significant, increase in knowledge regarding community forestry activities in panchayats where the program has been in operation. In general, knowledge scores of the 200 participating panchayats are twice those of the not-yet participating ones. However, the survey results also pointed out some areas in which extension needs to be more effective. These areas will receive particular attention. ■

For more information, contact E. Pelinck, Community Forestry Development Program, P.O. Box 107, Kathmandu, Nepal.

Training For Distance Education

The International Extension College's successful course on distance teaching is to run again in the summer of 1983, but for four months instead of three. An evaluation of previous courses, which the College has run with the University of London Institute of Education since 1977, showed that participants valued the course but thought it covered too much ground in too short a time. So the course has been extended, mainly to let students spend more time on individual project work while in London.

The course is designed for people working in all kinds of distance-teaching institutions. They have come from agricultural extension services, open universities and government correspondence departments in Africa, Latin America, and Asia. Since the courses began, participants have come from 28 countries: in 1982 they were from Botswana, Ghana, India, Jordan, Kenya, Malawi, Pakistan, Thailand, and Zambia.

While in London, course members work on four topics. All attend workshops on course writing, on administration, and on the mass media, so that the course meets the needs both of writers or editors and of administrators. Then each course member works on an individual project, under the guidance of an IEC tutor, and presents the results of the project to the other course members.

Scholarships to attend the course are usually arranged through the British Council. Further information is available from: Ms. Jo Bradley, Information Officer, International Extension College, 18 Brooklands Avenue, Cambridge CB2 2HN, England.

World Conference of Community Radio Broadcasters

The Quebec (Canada) Association of Community Radio Broadcasters has announced a major world conference on community radio to be held in Montreal, Canada, in August 1983. Community radio broadcasters—announcers, producers, and organizers—will meet to exchange information and discuss ways of cooperation. A community radio festival will be held at the same time; producers and broadcasters will exchange broadcast techniques and try out and discuss technologies.

Organizers of the conference are preparing a complete list of all community radio stations around the world. They know a good deal about community radio in Belgium, France, and North America, but would appreciate information about community radio broadcasters and organizations in other countries.

Write to Michel Delorme, Association des radiodiffuseurs communautaires du Québec, 938 est, rue Rachel, Montréal (Québec), Canada H2J 2J1.

ERIC (continued from page 12)

- Schwarz, Stephan. ***A National Documentation and Information Centre of the Kenya National Council for Science and Technology.*** 1980, 55pp. (ED 214 546)

This report presents the results and recommendations of a study conducted to aid the Republic of Kenya's National Council for Science and Technology (NCST) in the development of a National Documentation and Information Centre to coordinate existing research and development (R&D) services. The background of the NCST and its relationship to the R&D community in Kenya is reviewed, the NCST's views of the objectives and role of an R&D information center are presented, two earlier Unesco reports on the establishment of information centers in Kenya are summarized, the functions of the Regional Committee for the Development of Information Services in Eastern Africa are outlined, and existing documentation services and libraries in Kenya are described. Computer facilities available in Kenya for information and documentation service purposes are listed, and some of the general questions surrounding the development of national information services are addressed. The 25 recommendations presented are grouped in three broad categories: organizational objectives and structure, the center as a force in the development of other information services, and staff, consultants, and funding. A 57-item reference list and three appendices accompany the text. Available from EDRS in microfiche only for 97¢ plus postage. ■

Barbara B. Minor, Publications Coordinator, ERIC Clearinghouse on Information Resources, School of Education, Syracuse University, Syracuse, New York 13210, USA.

Communication (continued from page 5)

have asked the help of village leaders to persuade villagers to attend. During the meeting, it might have been possible to use some visual aids such as flipcharts, slides, or color photographs of HYV747, or actual specimens of fertilizers, herbicides, and pesticides. He could have invited a farmer from another village who had successfully tried the new variety. And even better, the field-worker could have earlier carried out an actual demonstration by planting the variety in a portion of a farmer's field visible to all in the village.

The important thing to remember is that people can receive communication only through the five senses; sight, hearing, touch, smell, and taste. The more senses we use to communicate our message, the greater the chances that it will be understood.

Feedback

Feedback is vital to effective communication. Sending messages is only one third of the job. The other two thirds are finding out what effect our communication has had on the receiver, and then correcting subsequent messages until the communication objective is achieved. It has been said that astronauts from the United States of America reached the moon through a series of errors, because each time they made an error, they found out what it was, how much of an error it was, and how it could be corrected.

Unfortunately, the agricultural field-worker in our example took the easy way out. Instead of taking steps to find out why farmers did not adopt HYV747, he simply concluded that they were "lazy, resistant to change, and truly stupid."

Sender

The sender is the initiator of communication and it is his responsibility to see to it that the communication objective is achieved. Unfortunately, most of those engaged in rural extension or communication often do not get enough training in communication. They may possess a technical background in agriculture, which is good for obtaining information on crops and livestock, but not for dealing with people. Many rural extension workers or communicators come from cities or big towns and therefore hold urban values and attitudes, thus compounding the communication problem.

All these factors point to the need for adequate training in communication and extension. Here, we should remember that the manner in which communicators and extension workers receive training is as important as the content of their training. For example, if lectures are the chief method used, communicators and extension workers are likely to use this method when teaching farmers.

The attitude of rural communicators towards their work and towards farmers frequently needs to be changed. We sometimes feel that we hold the key to the farmers' salvation and that we are doing them a favor. We think we have the answers to their problems. Thus, it is not surprising that we adopt a doctor-patient or teacher-pupil attitude when dealing with rural families.

Truly effective communication, however, cannot proceed from this premise. If communication is the sharing of ideas, the sender should learn to receive messages as much as he sends them. ■

Dr. Gecolea is a Planner/Programmer for the UNDP Asia and Pacific Programme for Development Training and Communication Planning (DTCP).

Reprinted by permission from *Agricultural Information Development Bulletin,* Vol. 4, No. 2, published by the United Nations Economic and Social Commission for Asia and the Pacific, United Nations Building, Rajdamnern Nok Ave., Bangkok 2, Thailand.

New Brochure of Note

The Information Division of the FAO (Food and Agriculture Organization of the United Nations) has published a new booklet entitled "Communication for Rural Development."

Illustrated with striking photographs of field-level communication which show rural people using cassettes, slidetapes, face-to-face communication, and radios, the booklet explains why communications should be an essential part of development projects. Author Paul Harrison cites many examples from around the developing world to illustrate the value of a well-planned, relevant development support communication component to rural development projects.

The booklet is available in French and Spanish as well as English, and can be ordered from the Development Support Communication Branch, Information Division, FAO, Via Delle Terme di Caracalla, 00100, Rome, Italy. ■

Villages (continued from page 15)

worm, measles, etc. You need to know the communications available now. What radios are there? Batteries, is there a supply? If the radio programs are for women, find out simple things such as whether women are allowed to switch on radios when husbands are not home. At what times do women listen? One has to go through all this. Then among the objectives of the major program you should find your communication objectives too. So resources are divided according to objectives and the question of $5,000 stuck on the end does not arise. At the implementation stage the communications go along with the rest of the objectives and are also monitored.

DF: Do you feel that it goes for technology in general that faith is not enough? The availability of technology is not sufficient to guarantee its use?

Tuluhungwa: Existing communications technology is sufficient for development needs. Where we have not succeeded is on the conceptual side. How can the technology be used? Secondly, we have not got the design of the messages sorted out. For example, sophisticated urban folk in rich countries may learn from videocassettes but, for poor rural folk, maybe it has to be drama. Where we have gone wrong is in the prior analysis that should have determined the choice of technology.

DF: Does this lesson apply to technology in general, for agriculture for example?

Tuluhungwa: Yes. Technologies at the village level exist already but perhaps they have been overtaken. The principles for introducing new technologies are similar. So that with industry, too, you must apply the same criteria before you decide on what technology to bring in.

DF: On a final note, can you say if the experience acquired has demonstrated whether developing countries are going to follow a different path from the industrialized countries. Can they avoid recapitulation of massive urbanization, environmental devastation, and all the other disasters which have befallen the richer countries?

Tuluhungwa: Development models in the Third World are undergoing a serious metamorphosis triggered by global financial problems. People feel they should have used human resources more, reforming the educational system, looking into local technology—the ox plough before the tractor, etc. Tractors were not used efficiently because the infrastructure was not there—no mechanics, poor maintenance. In some countries you find tractors running well in villages because the technology is there. In India, say. But in Africa the same tractor does not run! Now, by the year 2000 it is estimated that on average 60 percent of the population of developing countries will be urban. And 61 percent of growth in urban population will be from within the towns and cities themselves. So you are getting increasing numbers of people with no skills, who can find no jobs. Governments are concerned with supporting the 40 percent left in the rural areas, helping them to make a living and also dealing with the urban problems. So they are thinking of small industries, not the giant companies. That is where communications will play a big part, especially with training. The people have no skills and may have to be trained even to use a hammer or a small electrical tool. So communication again reappears as vital to skills training and on how to market produce without being exploited by middlemen. So you see, I think we can say that we have learned something over the last 25 years. ■

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Villages: The Forgotten Resource

An interview with Revelians Tuluhungwa

This article is reprinted from Development Forum, *Volume X, No. 6, published by the United Nations University and the Division of Economic and Social Information/DPI.* Development Forum *interviewed Revelians Tuluhungwa, Chief of UNICEF's Project Support Communications Service, on the subject of village development and communications.* DCR *is pleased to reprint selections from that interview.*

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***DF:** Could you outline the importance of communication in the approach to villages in developing countries?*

Tuluhungwa: Communication is both a process of social interaction, of learning, and also a matter of techniques. The problem is that many development agencies and many governments have looked at communication as information "per se," also as techniques. So a Ministry of Health official will define health education as the production of several radio programs based on a textbook developed by a doctor, or a series of posters to be hung on trees in the villages. Now both of those fail to help a farmer understand why he needs a latrine and how to build a latrine. It does not help him to understand why his children should be immunized or why a polio vaccine has to be three doses. It does not teach farmers fertilizer-use or post-harvest storage. So communications is a process in a program whereby if there is a food or education program one should look at what kind of orientation the technicians who are going to work on the program need—i.e., in terms of their capacity to explain the program to the villagers and generate motivation and participation. One must aiso look at what kind of community education is needed to enable the villagers to participate, benefit, and then care for the project when the external funding is over. So we are talking more of development as an education of the mind, as social change, as having more access to information and to learning skills. It goes beyond merely divulging or propagating information.

***DF:** You obviously have a great affection for villages. Do you feel it is important, for the future, that the rural sector should be healthy? Why do villages have to be treated with such attention?*

Tuluhungwa: In most countries, most of the populations live outside the cities. The cities expect rural people to produce food to support them and other less fortunate parts of the countryside. If the rural areas cannot feed themselves, the people who eventually suffer most are the people in the cities. Governments understand this. My respect for the village is based on the fact that I was born in one, I have worked in a village and I have seen the wealth of human resources that exists there. Their demands are not great if they can be assured that their crops will be good, that they can sell their surplus at a good price, that they can buy a new dress, cope with the diseases that afflict their children, buy a radio, or that sort of thing.

***DF:** The potential of technology as the key to development is a very popular cause. This is very evident in the area of communications where there have been remarkable changes in communications technology. Has this potential been realized?*

Tuluhungwa: Not as much as it should have been by 1982. Let me illustrate: for political reasons governments have invested in TV stations which run five to eight hours a day in most countries. When you examine the programs you will find it rare to have even five percent of the time allocated to educational programs. One reason is that those involved have nothing to do with the sectors of government responsible for development. It is the Ministry of Information, not Planning, Health, or Agriculture who controls programming. The development sectors themselves look at communications as a kind of appendage to a project or program. Any typical project description has a last paragraph which says "community education is going to play a big part in this program—therefore US$5,000 are reserved for it!" The $5,000 will go on a public relations brochure for the project or maybe after two years someone will say, "Hey, the program's not going well, can we get a communicator to come in and do something about it?" So by the time they get someone, there will only be $2,000 remaining, enough to produce one radio program. Now what *SHOULD* be done? Our experience shows that an experienced communicator should be called in *right at the beginning.* He should plan the communication component by gathering data and help the agency to design ways through which the villagers can participate in the information side. Otherwise they are passive. Gathering data is essential so you know what educational objectives there should be. You should aim at community education, behavior change, and last, skills acquisition. What sort of data? You need to establish the knowledge gaps, find out what they do now, for example on the nutrition side; what do they do now when a child gets kwashiokor, signs of hook-

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Development Communication Report

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