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INNOVATION AND TECHNOLOGY

DELIVERY OF MASS PRIMARY EDUCATION

A REGIONAL SEMINAR

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MARCH 1973

INNOTECH/RS-73/7

INNOTECH REGIONAL SEMINAR

ON

APPROACHES TO EFFECTIVE AND ECONOMICAL DELIVERY OF MASS PRIMARY EDUCTION

Singapore, 19-23 February 1973

F I N A L R E P O R T

SEAMEO REGIONAL INNOTECH CENTRE

1973

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BACKGROUND

In July-August 1972, a meeting called the Technical Working Group Meeting was held by SEAMES in Bangkok. It was a follow up of two previous meetings, also held by SEAMES and involving top level educators from within and outside the region, namely, the Brainstorming Session of September 1970, and the SEAMEO Regional Educational Planning Seminar of April 1971.

The general purpose of these three meetings was for the educators concerned to come to grips with the educational problems of the region and to recommend the priority areas to which the SEAMEO member countries should address themselves this decade.

The Technical Working Group Meeting, after having considered the various priority areas identified by the previous meetings, concluded that the following four projects were worth undertaking by SEAMEO as part of the "SEAMEO Plan for the Seventies."

1. Development of Instructional Objectives by SEAMEO Member Countries.

2. Development of an Effective and Economical Delivery System for Mass Primary Education.

3. A Study of Non-Formal Education in the SEAMEO Region.

4. A Study of Teacher Preparation and civilization in the SEAMEO Region.

The meeting also drafted the detailed plans for the implementation of these four projects, which subsequently were approved by the Southeast Asian Ministers of Education Council (SEAMEC). The Council also instructed INNOTECH to carry out the first two projects concerning primary education.

While the first project, that is, "Development of Instructional Objectives

by SEAMEO Countries", is already making some headway, this Regional Seminar on "Approaches to Effective and Economical Delivery of Mass Primary Education", is the first step toward the implementation of the second project, that is Development of an Effective and Economical Delivery of Mass Primary Education, which is scheduled to start in July 1973. The purpose of the Seminar is first to expose educators and educational administrators of the region to a few approaches to primary education that have been tried out in the region and elsewhere, and secondly, to obtain some inputs from the participants as to how best INNOTECH can implement the project.

The Seminar was held at the Regional English Language Center, 30 Orange Grove Road, Singapore 10, from February 19 to 23, 1973. It was opened by Encik Ahmad bin Mattar, Parliamentary Secretary to the Ministry of Education, Singapore.

PROCEEDINGS

In his opening address Mr. Ahmad Mattar*, Parliamentary Secretary to the Ministry of Education, Singapore, said that as was the case with other countries in the Southeast Asian region Singapore's educational system was still predominantly a traditional one, "we therefore welcome an opportunity to reassess what we are doing and to find out whether there are better ways of doing it. I believe this Seminar offers that opportunity and I congratulate INNOTECH for its timely initiative."

Dr. Sudjono D. Pusponegoro, SEAMES Director, said in his message* that "the original scope of INNOTECH is so vast and all-embracing that it has become incommensurate with its resources and capabilities. The proposed concentration upon seeking solutions for the problems of mass primary education will give INNOTECH a clear direction in which it can move."

Mr. Ly Chanh Duc, INNOTECH Director*, stressed that "assuming that an effective and economical delivery system were found, the success of the whole project will depend on the extent to which the member countries will make use of the published results." He further said that "innovation is a difficult area in which to work. On the other hand complacency and inertia will only draw us nearer and nearer to what many leading educational thinkers have termed educational bankruptcy." Mr. Duc concluded his address with a question from Andre Gide who said that "Man cannot discover new oceans unless he has the courage to lose sight of the shores."

There were seven plenary sessions in all, the first six were devoted to presenting working papers, and the seventh for the adoption of the final report. There was also a Select Committee Meeting which held two sessions concerning INNOTECH's role in developing solutions to the mass delivery problem.

The head of each country delegation was requested to chair one plenary session, and a member of each delegation was asked to act as rapporteur of one session.

The working papers are reproduced herein in their order of presentation. A summary of discussions follows each paper.

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* The three speeches are presented in full on the pages to follow.

SPEECH BY MR. AHMAD MATTAR, PARLIAMENTARY SECRETARY (EDUCATION) AT THE OPENING CEREMONY OF THE INNOTECH REGIONAL SEMINAR ON "APPROACHES TO EFFECTIVE AND ECONOMICAL DELIVERY OF MASS PRIMARY EDUCATION" 19TH FEBRUARY 1973

Your Excellencies, Ladies & Gentlemen,

Singapore is privileged to have provided a temporary home for INNOTECH since April 1970. We have watched the growth of this regional project with paternal pride, although we are only foster parents. Now that peace has come to Vietnam, the plans to move INNOTECH to Saigon will definitely be carried out, I understand, in July this year. We shall be sorry to see INNOTECH go; at the same time, we shall rejoice in the fact that it will grow up in its rightful home. I am confident that, besides serving the needs of the entire Southeast Asian region, INNOTECH will become a powerful force in spearheading the reconstruction of Vietnam through innovative measures in education.

Human resources are more important than material resources in national development. For without adequate human resource, material resources cannot be exploited for the benefit of the country. And human resources can be developed only if education at all levels is freely available.

In recent years, the provision of education in the traditional way has become the subject of intensive study. Many experts consider it to be wasteful and inefficient. Even if unlimited funds were available, there are other constraints which make it impossible for some countries to build sufficient schools and train enough teachers to cope with the ever-increasing number of children of school-going age. New approaches have to be found, new methods developed, new technology harnessed to solve this problem. That is the task which INNOTECH has set itself.

As with other countries in this region, Singapore's educational system is still predominantly a traditional one. We therefore welcome an opportunity to reassess what we are doing and to find out whethere there are better ways of doing it. I believe this Seminar offers that opportunity and I congratulate INNOTECH for its timely initiative.

To the distinguished participants and observers, some of whom have come from as far afield as Africa, North and South America, may I extend a very warm welcome to Singapore. I should also like to thank the INNOTECH Director most sincerely for the opportunity to be with you today.

It is now my pleasure to declare open the INNOTECH Regional Seminar on Approaches to Effective and Economical Delivery of Mass Primary Education.

MESSAGE FROM DR. SUDJONO D. PUSPONEGORO, SEAMES DIRECTOR, READ BY THE SEAMES PROGRAMME DEVELOPMENT ASSISTANT AT THE OPENING CEREMONY OF THE REGIONAL SEMINAR ON APPROACHES TO EFFECTIVE AND ECONOMICAL DELIVERY SYSTEM OF MASS PRIMARY EDUCATION, SINGAPORE. 19TH FEBRUARY, 1973.

Mr. Parliamentary Secretary,
Your Excellencies,
The Director of INNOTECH,
Distinguished Participants,
Consultants, Observers,
Ladies & Gentlemen :

I very much regret not being able to attend the present Regional Seminar organised by INNOTECH, which, in my opinion, is an important event in the calendar of SEAMEO activities. Last year, I had the opportunity of attending the early part of the Regional Practicum on Alternatives in Education, likewise organized by INNOTECH, and have since had a chance to study the report of that Practicum. I must admit that I am convinced more than ever that INNOTECH is exploring the right avenues towards the solutions of regional educational problems. Looking through the agenda of the present Seminar, I am hopeful that the same constructive results will be achieved again this year.

Please permit me to recount briefly the background leading to the convening of the present Regional Seminar. First and foremost, I must bring to your attention that this Seminar constitutes part of a systematic process of SEAMEO educational development efforts. In 1970, a "Brainstorming Session" was held in Bangkok to explore ways and means of responding to the educational needs of the region in the new decade. The findings of that Brainstorming Session were later refined at the "SEAMEO Regional Educational Planning Seminar" held in Bangkok in April 1971. This Seminar came up with a set of proposals in broad areas in educational activities which SEAMEO might undertake. These proposals formed the basis of a subsequent meeting of the Technical Working Group which come up with the "SEAMEO Educational Development Programmes for the 1970's", containing four project proposals, two in the area of primary education, and one each in the areas of non-formal education and teacher education. One of these projects is the "Development of an Effective and

Economical Delivery System for Mass Primary Education" which, perhaps, is one of the most challenging developmental tasks that SEAMEO will be undertaking during the rest of the present decade. We are planning to work on it on a stage-by-stage basis right up to 1980. I must emphasize that through all the planning stages which have led to the formulation of the SEAMEO Educational Development Programmes, INNOTECH has been playing an important role as the master-builder of SEAMEO educational plans. The INNOTECH staff had a hand in developing the first draft of the project which forms the basis of the present Seminar, and on behalf of the Organization, I wish to record my thanks to my colleagues at INNOTECH for the sustained efforts they have put into our regional endeavours. When the INNOTECH people say that they are pleased to be able to invest their resources over the next several years in exploring ways to solve the problems of mass delivery of primary education, what they really mean is that they will be addressing themselves to an important task which, in fact, is their own choice as well as the choice of the Organization. It is comforting for a SEAMES Director to know that a Regional Centre has been created which is really responding to the priority needs of the region.

It might be interesting if I could share with you some of my personal experience with regard to the fund-raising for such activities as conferences and seminars. Some donor agencies are sceptical whether any concrete and tangible results could emerge at all from a seminar, where people do a lot of talking and expounding just mere ideas. On the other hand, one donor agency even expected that a SEAMEO Seminar should be able to produce a detailed proposal for technical assistance ready to be submitted to the donor. While it is true that many seminars only take the form of brainstorming, we must maintain that SEAMEO is more action-oriented than that. The reason why we have set up our Organization with such operational mechanisms as the Secretariat and the Regional Centres is that we have fully realized the "staff" function of a regional organization. A seminar is a place to generate ideas, but it is the staff of the Organization who will further analyze, digest, reconsider, scrutinize the findings of such a gathering, and explore new avenues for concrete actions. This SEAMEO has done. If you only look at the agenda for the present Seminar, you will find that one full day will be devoted to a meeting of a select Committee, whose responsibility will be to assess the role which INNOTECH should play in seeking solutions to the problems of primary education. If a question were to be raised as to whether INNOTECH has

the capability to assess its own role in the total framework of SEAMEO,I would maintain that it has. But it has also the humility to ask other people to help them think out an orientation which will best serve the priority needs of the region. We are not asking the participants to do all the thinking for us, but we are asking them, in all humility, to help us think, which is a different thing.

From the point of view of the Organization, I welcome also INNOTECH's move to impose a certain discipline upon itself. The original scope of INNOTECH is so vast and all-embracing that it has become incommensurate with its resources and capabilities. The proposed concentration upon seeking solutions for the problems of mass primary education will give INNOTECH a clear direction in which it can move. There will be little doubt that this direction is the right direction, since we are basing our activities on a set of priorities which have been worked out through a long process of planning lasting over two years. I do not view the acceptance of a definite orientation as a limitation or as an admission of defeat. Priority is, in some ways, a guarantee of success. There will plenty of room for other international organizations to play their part in the Southeast Asian region. We could even pride ourselves as being the prime-mover of educational innovation in Southeast Asia.

One characteristic about SEAMEO in general and about INNOTECH in particular is our international orientation. We always open our door to new ideas, and it can be seen that some of our Centres, although designated as "regional" centres, possess more of the qualities of international institutions. An INNOTECH seminar is an international gathering of great importance, and I particularly welcome INNOTECH's efforts to invite participants and speakers from outside the region. Education is a field too vast to be managed by one organization, and there are good reasons for us to expose ourselves to new thinking from outside. But we must guard ourselves from the fashion of just trying to attach ourselves to big names. Upon reading through the final report of last year's Regional Practicum, I wonder how far we have really come to grips with the revolutionary ideas as propounded by Ivan Illich. I personally think that there is more to be gained from such an exposure to new ideas than just treating everything as intellectual acrobatism. Ideas which differ from ours can always shake us out of our lethargy, of our dogmatism, or even of all kinds of indoctrinations. I object to some people calling a regional centre like INNOTECH an "Ecole Americaine d'Extreme Orient". If we

are sometimes eclectic in our approaches to educational problems, we do this by design and not by default. The present age is an age of the internationalization of knowledge and expertise. There is full justification to talk about a creative eclecticism. I think we have done very well in our endeavor to improve the quality of education in the region through our international contacts.

Looking at the list of participants, I have come across names which are familiar to me. Many of the participants have long been associated with our Organization, and one of them happens to be the first Director of SEAMES. I can speak with confidence, therefore, of the allegiance of Southeast Asian educators to SEAMEO. Let us hope that this allegiance will ripen into further meaningful collective efforts. Very soon the INNOTECH Director will be going out to the member countries to recruit staff for his Centre. The ideas which will be generated at the present Seminar will be futile if we do not have people carry them out. Let us lend INNOTECH a helping hand.

I cannot conclude without thanking the Government of Singapore for having kindly hosted INNOTECH for the past 3 years. Let us wish the Centre a prosperous future in its new home in Saigon, which will be in the heart of the post-war reconstruction efforts. The Council, at the recent Conference in Phnom Penh, passed a resolution calling on countries and agencies to assist SEAMEO in helping Vietnam, the Khmer Republic and Laos in their reconstruction and development efforts in the field of education. Please allow me to reiterate here our determination to implement the Council's resolution. Let us join hands in these noble efforts which will certainly prove to be more than just a physical reconstruction, but a moral regeneration for Southeast Asia. INNOTECH ought to be part of that regeneration. Let us help the Centre to achieve that goal. May I now wish the Seminar participants every success in their deliberations.

ADDRESS BY LY CHANH DUC, DIRECTOR, REGIONAL INNOTECH CENTER, AT THE OPENING CEREMONY OF THE REGIONAL SEMINAR ON "APPROACHES TO EFFECTIVE AND ECONOMICAL DELIVERY OF MASS PRIMARY EDUCATION"
Singapore, 19th February, 1973.

Mr. Parliamentary Secretary,
Your Excellencies,
Distinguished delegates and observers,
Ladies and gentlemen,

On behalf of the SEAMEO Regional INNOTECH Center, I have great pleasure in welcoming you to this regional seminar on "Approaches to Effective and Economical Delivery of Mass Primary Education." We are honoured by your presence, and we are grateful for your concern about the future of education in this region. We are very fortunate today to have with us Encik Ahmad bin Mattar, the Parliamentary Secretary to the Ministry of Education, Singapore. We wish to thank him most sincerely for having graciously accepted our invitation to preside over this ceremony and to declare it open.

As indicated in the Press Release, participants in this Seminar include 24 delegates from the eight SEAMEO member countries, and some 25 observers representing various organisations and agencies from within and outside the region. In addition, we are fortunate to have three special guest speakers who have come from as far as Brazil, El Salvador and Ethiopia. One only regret is that the guest speaker from Tanzania, who was to tell us about his experience in "The Nationwide Learning System" in that country, has been unable to come. In this connection, I would like to thank the Asia Foundation and the International Development Research Center of Canada for their generous financial assistance which has permitted us to invite the guest speakers from half-way across the world.

The high level of expertise and experience of the country delegates, guest speakers and observers, augurs well for the conduct of this seminar. INNOTECH in particular, will certainly benefit a great deal from their valuable contributions.

The background of this Seminar is a long story. To make it short, however, let me just say that this is a follow-up of a series of regional meetings and conferences organized under the auspices of SEAMEO, in which concerned educators and educational administrators of the region have come to the conclusion that primary education should top the list of priority problems to which the SEAMEO countries should address themselves in the course of this decade.

This conclusion has been translated into a long-term research project calling for the "Development of an Effective and Economical Delivery System for Mass Primary Education" for the SEAMEO region. Subsequently, the Council of Southeast Asian Ministers of Education has requested INNOTECH to implement the project.

Plans for this implementation are underway, and it is expected that they will be finalized by June 1973. In the meantime, this seminar is organized as a preliminary fact-finding exercise of the project.

The idea is first to expose educators and educational administrators of the region to a few new approaches to primary education that have been tried out in the region and elsewhere, and secondly, to obtain some inputs from the participants as to how best INNOTECH can implement the project.

There is no question but that a successful outcome on the project will meet one of the most pressing needs of the region. However, assuming that such a successful outcome were arrived at, that is, assuming that an effective and economical delivery system were found, it should be stressed that the success or failure of the whole project will still depend on the extent to which the SEAMEO member countries will make use of the published results.

What I want to get at is that we are all involved in this problem, and that the future of our children will depend in large part on the contributions each and everyone of us here, and our colleagues back home, will care to make to this common undertaking.

Innovation is a difficult area in which to work. On the other hand, complacency and inertia will only draw us nearer and nearer to what many leading educational thinkers have termed "educational bankruptcy."

To conclude, may I leave this thought with you from Andre Gide, "Man cannot discover new oceans unless he has the courage to lose sight of the shores."

Thank you.

WORKING PAPERS

COMMUNITY EDUCATION VERSUS TRADITIONAL EDUCATION

by Dr. Nguyen-Quy-Bong
Professor of Education
Technical Teachers College
Saigon, VIETNAM

Ever since the school is used by man as a special agency for the socialization of the young, questions have been raised about the relations school and community.

Two other answers or points of view have been found. The first is a traditional one, so called because it was the prevailing one in most countries up through the nineteenth century.* According to this view, the school should be walled off from the problems of the local community and should limit itself to teaching mental skills and subject matters.

The other answer, "the community school", has emerged within the present century, first in the southern and impoverished areas of the U.S.A., and then in the Philippines. According to this view, the school has broader functions that bring it into close relations with the surrounding community. (Havighurst, 1962, 303-4)

TRADITIONAL EDUCATION

When the function of the school is seen to be only that of a highly specialized job of training children's minds and teaching them intellectual skills, the school becomes separate from the community. The school is then untouched and unaffected by social life. The gulf between the school and the community is wide. Too much is taught in the classroom that relates very little to the child's life in the family and in the community.

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* To Asian countries living under colonial rule, it was prevailing until after World War II when these countries finally gained their independence.

Fig. 1. The traditional concept of school-community relations. (Havighurst, 305)

The traditional school is the type with which most adults are familiar. Emphasis is placed upon school subjects, with most of the time divided between the three R's (reading, writing, and arithmetic) in the lower grades, and between language, mathematics, science, and social studies in the higher grades. Teachers are expected above all to be expert in their subject-matter fields and in teaching methods; and emphasis is placed upon academic ability and external examinations as the child's only avenue to success. (Havighurst, 305)

Apparently the most serious problem of the traditional school in Asian countries is that under highly centralized educational systems there is a unique curriculum for the whole country, and all grade schools are governed by the same regulations leading to the final judgment: the nation-wide examination which obviously determines the whole process of teaching and learning (Unesco, 1958, 235)

Such a uniform curriculum for both rural and urban children, as well as for both vocational and college-bound students, illustrates the danger of divorcing education from the aspirations of each student. It cannot consider the particular needs of each region, ethnic group, and social subculture. As a result, most elementary school children - future rice-growers, housewives, and mothers - gain very little basic knowledge which they can use after they leave school.

This urban-rural dichotomy indeed creates an intellectual, social, governmental gap between the capital and the countryside, as much as between the educated urban elite and the rural populace (Donnell, 1966, 49).

THE COMMUNITY EDUCATION CONCEPT

In contrast with "the traditional school, "the community school program utilizes the schools as an instrument for the social and educational development of the community. The functions of the school and community are integrated so that under the new concept there is no boundary line separating the two.

The school draws much of its materials and programs from the resources of the community, and the people utilize the schools for many activities calculated to improve community life. Literary campaigns, adult education, social and civic programs are conducted by school teachers with the cooperation of community leaders.

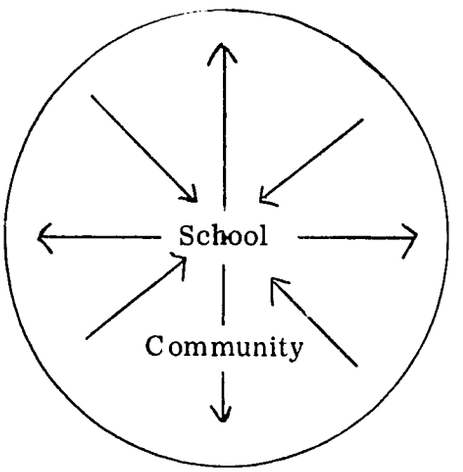

Fig. 2. The concept of the community school: (Havighurst, 311)

The community school has been an attempt to improve living conditions in Asia. It has been extensively operated since the end of World War II, first in the Philippines, then in India and Taiwan. It now covers most of Asia. In fact, it was welcomed by the 1960 WCOTP (World Confederation of Orgainzations of the Teaching Profession) meeting on "Educational Policy in Asia":

"What makes the curriculum of the "community schools" so outstanding is that it reflects the whole life of the community .... It is a functional and living curriculum. The community life permeates throughout the content of the whole curriculum. Not only does the pupil learn all the facts about life in his community, but work experience is also provided so that

he may take an active part in the improvement of conditions of his little town or village.

"The adaptation of the curriculum to community needs is especially important in countries that have long been under a foreign regime." (WCOTP, 1960, 6-7)

The whole community is then an educative agent. In other words, education is the result of living and growing up in a community. It is education through the environment whereby the individual gains by living in a community which is trying to improve itself.

Comparing traditional education to community education. A. N. Gillett offered a most interesting analogy:

"Education has been represented as a triangle linking teacher, pupil, and subject, when it should be represented as a cross in a square by which teacher, pupil, subject, and the material in the neighbourhood to which the subject refers are all linked to each other." (Gillett, 1969, 81)

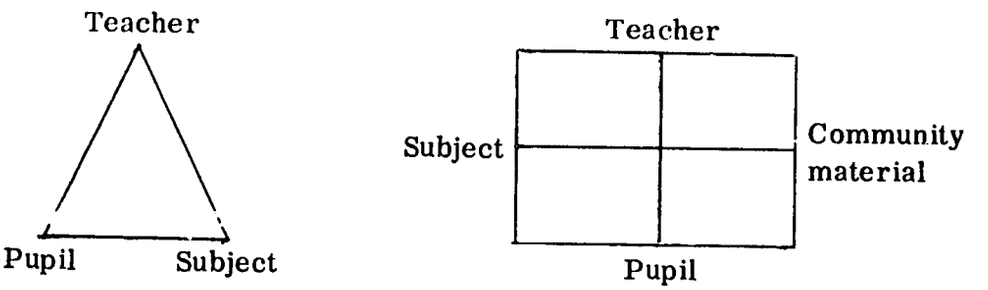

Fig. 3. Traditional education vs. Community education.

In the words of Marcel de-Clerck, the UNESCO innovator on community education in Vietnam:

"Different from the ordinary school which is called 'traditional' school, the community school may be defined as a school for life and by life. The education it offers - as Dewey said - is not life preparation: it is life itself, life in a world in the process of full evolution." (de-Clerck, 1964, 14)

THE COMMUNITY SCHOOL

A community school in the full sense of the term has four characteristics:

1. It conducts periodical surveys of the needs and educational resources of the area it serves.
2. It adjusts its curriculum in the light of its surveys.
3. It attempts to meet by practical work some of the needs it uncovers.
4. It draws on local educational resources, including a variety of people who can be of some assistance to its work. (Gillett, 77)

The surveys it conducts - or "etudes du milieu" - help identify significant social and economical problems, and set up priority order among the problems to be solved. The classroom teacher then helps school children understand the kinds of problems which must be solved if life in the community is to be improved, and gives leadership in finding ways by which the problems can be solved. First, by stimulating interest and developing understanding with children, second with parents, and later with community leaders, the teacher takes the initiative and gives guidance in the solution of problems at the local level.

The community shcool has, therefore, two ranges of activities: (a) school activities within the official curriculum; and (b) extra-curricular activities concerned with the community and its various problems in the areas of education, health, home economics, and agriculture, etc. The community school wants to get involved with community life, and participation of this nature may alleviate the problems which hamper community development.

As to school activities, the teacher tries to relate his instruction to the daily life of the student. In addition, his teaching is based on active methods: children learn from data collected by themselves, as well as through observation, discussion, reports, and manual skills. Required curriculum topics are selected and arranged in such a way that they are commensurate with the problems of the students and their community. Learning activities take the form of "projects". Subject matter is no longer considered an end, but a means to implement the project. In this way the school tries to bridge the traditional gap between academic knowledge and the life of the community. It provides a practical relationship

between what is taught and the daily lives of the children. This involvement with real life certainly helps the students, since in Asia most of them receive only an elementary education.

As to extra-curricular activities, the community school teacher is no doubt one of the few most qualified persons to help the community people understand the objectives of community development programs. However, he is not supposed to substitute for the qualified specialists or technicians in charge of community development in health, agriculture, cooperatives, and public works. As a community educator, his major role is to serve as an unofficial liaison officer between the community people and the specialists in every field of community development. Such a procedure will help insure effective use of the limited number of available specialists.

The reason why the community school teacher is a key person in community development is that he is an educator, therefore a traditionally trusted person in Asia. The community masses usually are not willing to accept immediately new techniques presented to them by the agent in charge of the program because the latter is a stranger. Experience has demonstrated that any community development program must assume an educational aspect. Behavior change precedes the improvement of a technique. In fact, change does not happen quickly as the result of a lecture, a demonstration, or a movie. A new idea takes time before it is accepted. To obtain lasting results, the educational process requires both continuity and permanence. Yet the development agent who has to cover hundreds of villages cannot stay more than a few hours in each of them. Only the teacher, living in the locality itself, is able to ensure continuity and permanence.

THE COMMUNITY SCHOOL TEACHER

Generally speaking, the community school teacher has a double role in Asian society. He is both (1) school teacher, and (2) community leader. In the words of Florence Stratemeyer, teachers should be well prepared to become both (1) educational teachers in their communities, and (2) guides who help children and youth become independent, active citizens. (Stratemeyer, 1956, 232)

Besides the task of educating children, the school teacher must help in the solution of the many problems from which the community suffers, such as illiteracy, ignorance, misunderstanding, poor health conditions

and antiquated agricultural practices. The deprived situation of rural life in developing countries desperately needs the help of the community teacher. An African educator, Wodajo, Dean of the School Education in Addis Ababa, has dramatized this need in the following statement:

> "As a community teacher in a rural environment, the teacher, often as the most educated member of the community, must assume the role of the natural leader. He should be prepared to give advice on a wide variety of pursuits including child care, personal hygiene, farming techniques, sports and recreation, marriage counseling, social work, municipal administration, etc. Had it been America or Europe, more often than not, each one of those pursuits would have called for a specialist with a Ph.D. degree! An African village is lucky enough if it has one person to tackle them all. And this African is usually the village school teacher." (Wodajo, 1966, 6)

This means that teachers must be instructed in the use of problem solving as a method of teaching and learning; the application of the scientific method in defining problems; collecting and organizing facts to answer questions; drawing conclusions and taking the necessary steps to put a plan into action. And if the teachers are to be qualified to implement these more sophisticated methods of instruction, a continuous in-service program must be carried out to educate them.

Unfortunately, among various problems which have limited the achievements of the community school in Asia, the most critical one is probably the shortage of qualified teachers. Not enough school teachers are sufficiently imbued with the philosophy of the community school, nor do they all master the problem-solving technique.

Community education is so different from ordinary teaching that special skills are required. One of these is knowing how to deal with many different kinds of adults. Some teachers feel more at home with children than they do with adult people. The isolation of the average teacher training institution helps perhaps to promote this defect. (Gillett, 82)

From the professional standpoint, stronger emphasis should be put on teacher education, in both pre-service and in-service training, as the most important investment on community education in Asia, since people as ever hold the key to success in all educational endeavors.

Another hamporing factor is the fact that many teachers and school administrators may not have roots in the community. They are therefore

seen as outsiders (Havighurst, 317). In fact, the number of teachers working in the place where they once lived as children is very small, and there is a danger that an example is set of living as a stranger in the land.

> "The warmth of affection for favourite places to play and for people in the locality needs to be transferred in order to understand how to help the children form a love of their home area so that they become proud of it and are prepared to work for it. When teachers grow "roots" in the neighbourhood themselves the childfen tend to do the same.
>
> "If such teachers can be found community education will flourish, democracy will thrive through first hand acquaintance, and some of the baffling social evils of the times will begin to melt away in face of a practical social education." (Gillett, 82)

CONCLUSION

Community education is generally synonymous with fundamental education, adult education, and social education. It is designed to help people improve their communities and understand their problems, responsibilities, and duties as effective citizens. It is an educational philosophy which has concern for all aspects of community life. It also seeks to make the educational program more relevant by bringing the community into the classroom and take the classroom into the community. (Minzey, 1972, 153)

This philosophy of education implies a new concept of teacher education, since it demands a new kind of teacher with a dual function of (a) classroom worker, and (b) community leader.

That new teacher will help people to help themselves, to discover their real needs and find ways to fulfill them. It is upon this basic concept of self help that a better society will be built. Cole Brembeck reported from his field experiences in Asia:

> "If clean water, better sanitation, better schools, and more food must wait until Asian governments can supply them, they may never come. The need is too great and the resources too few. The answer must be found within the

> people themselves. And it is the business of the new education to help them find those answers." (Brembeck, 1965, 38)

In brief, the "community schools" concept relies on the fact that the schools belong to the people of a community and should be used to meet their needs (Douglas, 1972, 189). The old concept of the "government school" should vanish. Education should be closely identify with community life and aspirations. It will not be education "about the people," or only "for the people," but "with the people." (Henry R. N. , 1963, 212)

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Discussion Summary of Dr. Bong's paper

Participant: There is a need for relevance between what is taught in school and what is taught in real life. I doubt, however, whether the teacher can be an effective change agent among people who have rigidly fixed ways, such as those in the rural areas. It would be more fruitful to teach the young than to change their elders, who would tend to resist change. The task of changing the community should be left to the community development workers and leaders. The teacher should be more concerned with developing the new rather than the old generation, who would require a superhuman effort to change their ways.

Participant: It was not easy to implement the community school idea. May I ask the Philippine delegation to share their experience in community education with us, since the Philippines is among the first countries in Asia that adopted the community school idea.

Participant: The doubts regarding the feasibility of combing academic work with community work arise from the fact that in Dr. Bong's paper, there is a sharp distinction between what the teacher does in school and what she does in the community. In the Philippines, a unified approach to community education has been adopted. Community work is integrated with school learning. Program flexibility is allowed so that teachers may schedule lessons to be carried on in the community with other community development agencies participating. Community activities have now become part of the students' curricular activities.

To solve the problem of reluctance of teachers to accept assignment in rural areas, teacher education is geared to community education. Teachers under training are helped to understand rural problems through a curriculum that has been adjusted to rural needs.

Speaker: I agree that more time should be devoted to in-school than to out-of-school activities, but we cannot educate a child effectively without changing his environment. The teacher's role is not to replace the community development worker.

Rather, she has to assist the community development worker since she is not usually the most highly educated member in the community. I also agree that changing people's rigidly fixed ways is not an easy task. I would rather think of the teacher as a coordinator of community development work, not a superhuman. I suggest that extra-curricular and curricular activities be brought together under a specific central interest, e.g., community development.

We generally think of community education as suited only to rural areas. Asian countries also have problems demanding attention from community development workers in its urban areas. The school should also help solve problems that saddle the big cities.

To summarize then, the teacher's role in the community school is that of coordinator. She coordinates not only in-school efforts but also efforts of outside agencies in the direction of community development.

Participant: The primary school in a village might not be able to perform all the community development tasks alone. To be more competent in community work, the teacher must be a learner; she must learn with her pupils and people. She must learn from outside agencies. She cannot be a superhuman, but she must be as human as other people and be willing to help others.

Primary education in Southeast Asian Countries is in general directed toward the preparation of the young for the next higher level of education rather than for everyday living. Community education prepares the student for life needs. In stressing community education, however, there is danger of neglecting the preparation for higher education of that small percentage of students that will later go on to become the professionals and scholars. The community education approach must take account of this requirement.

Community education is one way of making the present system work better, but there is need to give thought in educational planning to the alternatives for achievement of

educational objectives through delivery systems other than the present system.

The ideas of concentrating only on the education of the young would no longer work since we cannot overlook the fact that there are individuals outside the education system who need to be educated.

Participant: It would be interesting to view education from the outside or by others out of the school, i.e., "to translate the outside view in the inside terminology."

Speaker: This is an interesting problem. I would restate the problem thus: "How the community should express itself in terms of what they want for their childfen." In my paper I suggested some steps for identifying these "wants for children", namely, a survey using formal and informal techniques of investigation.

The utilization of advanced pupils to teach their peers may relieve the teacher of some duties to allow her time for community work. With meaningful development of delivery systems, the teacher may be relieved of some work and have more time for community education.

Participant: In order to develop an effective delivery of mass primary education, there is need for a general common denominator for all systems, allowing a little flexibility for community education as well as for preparation for higher education. The rule of the school is, first and last, to educate and "not necessarily to make the child a better villager."

INNOTECH: Dr. Sim Wong Kooi, University of Malaya, conducted a study on community expectations in Malaysian schools. The report will be published by INNOTECH in one and a half month.

Speaker: I appreciate the comments made by the participants and delegates from various countries. The problem that still remains as regards community education is how to bridge the gap between theory and practice.

Attempts have been made in other countries to bridge that gap but there is still much to be desired. The problem in this regard boils down to what to teach and how to teach it. There is a tendency to deal more with what to teach than how to teach, not realizing that content soon becomes obsolete because of rapid knowledge explosion. This points to the need for teacher training, especially at the primary level, since most children do not go beyond this level.

REDUCING COSTS OF PRIMARY EDUCATION

by Dr. Kaw Swasdi Pancih
Director General,
Department of General Education
Ministry of Education
Bangkok, THAILAND

The three main purposes of primary education are literacy, citizenship, and a foundation for further education. Any effort to reduce costs of primary education must not lose sight of these purposes.

The topic "Reducing Costs of Primary Education" seems to suggest that either the costs for this level of education are too high or there are inefficiencies and wastages in the system. Whether the costs are too high is, in my opinion, still debatable. It is true that, in Thailand, the expenditure for primary education amounts to 59.86% of total educational budget. But per capita cost for primary education is only 674 baht while the allocations for academic secondary, vocational secondary, and teacher training are 1,437, 2,551, and 3,663 baht respectively. These figures show that the expenditure for primary education is comparatively low. It is hardly enough unless the primary schools with less money are run as efficiently as the upper schools. Further analysis of the costs of primary education in Thailand shows that capital expenditure amounts to only 10.21% and the rest being recurrent expenditures 86.07% of which are teachers' salaries.

One can safely assume that this pattern will continue for a long time to come, for we would not get more money so that more could be invested on physical facilities, nor could we reduce the expenditure for teachers' salaries since we still have a great shortage of the teaching staff. Thus the reduction of the costs of primary education is not justified. The problem, then, is to find more effective and economical methods of using the budget allocated for primary schooling so that we can accommodate more students and at the same time retain respectable educational standards. In other words, we should exercise optimum use of the minimum funds with the best possible outcomes. This, in essence, is

my alternative approach to reducing costs that I aim to propose for your consideration and discussion.

Presently, I would like to identify conditions and problems which are obstacles to the development of mass schooling especially in the Asian region. These conditions and problems are numerous and "inter-causatic". The conditions are poverty, remoteness, language differences, varying traditions, attitudes and many others. These conditions cause further educational problems known as wastages such as grade repetition, drop-out, absenteeism, irregular attendance, lack of motivation, and temporary literacy. In addition, there are such instructional and management problems as insufficient quality and quantity of teaching staffs, uninnovative teaching methods, irrelevant curriculum, insufficient facilities and equipment, shortage of instructional materials and so on. Under such situation one cannot expect outcomes to be of good quality.

The problems just mentioned must be first of all minimized and, if possible, eliminated. At the same time efficient management should be created. This is, to me, the only way for a school administrator to do in his attempt to reduce costs. In considering the cost, it is not always just a matter to cut anything down so that we can save something. Often times we have to increase initial inputs so as to reduce wastages or to increase efficiency in order that, in the long run, we may gain quality products.

There are three areas, in my opinion, for you to consider as follows:

1. Physical Facilities. A survey, research, or experiment must be conducted to find the most functional and economical design for school plants and furniture. UNESCO school Building Research Center seems to have worked out the answer to this problem. Nevertheless, each country must conduct its own study to suit its own conditions. For example, the minimum height of the ceiling, the optimum size of classrooms, the flexible partition, and the right type of construction materials could reduce the costs of school plant construction.

2. Good Management Practices. Good management means efficiency of operation which reduces wastages in time and materials and therefore reduces costs. The following topics are chosen as factors relating to management activities:

a) Establishment of Guidelines. Guidelines are management tools designed by administrators for the school to do its job more efficiently. The ultimate end of the guidelines are standards or goals which the school must strive to meet. An example of such guidelines that need to be developed is the administrative handbook which includes sections on school plant maintenance schedule, utilization of facilities, and a plan for enrolment expansion. Without such guidelines many schools will either neglect to maintain their buildings and equipment, or tend to overbuild their facilities, or fail to provide for future expansion.

b) Encouragement of Good Attendance. Compulsory attendance law is not a guarantee that all students will attend school regularly. Good attendance is a prerequisite to the reduction of student wastage. Therefore, much energy must be devoted to recruit parents, teachers, and the local authorities to achieve good attendance.

c) Better Utilization of Teachers' Time. Teachers are our most precious commodity since they are always in short supply, and they are unreplaceable resources for quality education. Therefore, their time should be used mainly for teaching.

In many Asian countries, teachers are expected to do both teaching and clerical jobs. It is time we employ para-professional staff or recruit volunteers to help our already overtaxed teachers.

Most teachers are civil servants or publicly employed. In addition to their salary and standard allowances, they should have monetary incentive, especially for those who teach in remote or "sensitive" areas. There are other kinds of incentives such as satisfactory working conditions and proper climate. Only with a reasonable degree of incentives and conditions can we expect our teachers to deliver their maximum effort towards quality teaching.

d) Community Participation. Although the school belongs to the educational system, it is, in fact, a part of the community in which it is located. The community must be encouraged and recruited to contribute to the school in terms of human,

financial, and material resources. It is quite common in most Asian countries for the community to provide men to help teachers as assistants and resource persons, to donate money to build school plants, or to but materials for the schools. If more could be done along these lines the burden on the system to finance education will be lessened.

3. Teaching and Learning. We all know that learning takes place both in and out of school, that learning is the result of the interaction between a student and his teacher, between a student and his peers, and with his environment. What we must find is the best and most economical method by which the teaching and learning could take place. We must find a way for the teacher to effectively teach more students. I, therefore, suggest the following possibilities all of which, I am sure, are already well known:

a) Multi-class Teaching. Many teachers inadvertently use this method out of necessity. There are just not enough teachers to teach all the classes. We must try to capitalize on this inadequacy. With programmed texts and other teaching aids we may be able to help the one-man show to succeed.

b) Monitorial System. This is not a new system but it has yet to be explored and implemented. Many administrators have found out that older students can communicate with their younger friends or classmates better than the teacher can. This method will be particularly useful in the ever short-handed rural primary schools.

c) Teaching Assistantship. It is generally accepted that teaching process does not require a teacher to look after his students all the time. There are many occasions in the teaching process that can be assigned to a loss qualified person to supervise students working on their lessons. In Thailand, the assignment of grade X graduates to help teach primary school students has demonstrated that it is useful, economical, and relatively successful, particularly in rural areas.

d) Local Resource Person. This was partly mentioned earlier under Community Participation. It differs from the teaching assistantship in that the local resource person provides his services free of charge, that his services are irregular, and that he is very often an expert in his own field.

e) Increased Class Size. In addition to employing Multi-class teaching, increased class size will help solve the problem of teacher shortage. Employing other methods such as teaching assistantship and teaching aids we should find out how far we can go in increasing the number of students in a class beyond the figures recommended by present research findings before we reach the point of diminishing return.

f) Use of Teaching Aids and Mass Media. It seems to me that teaching aids are indirectly used to reduce cost in education. More attempt should be made with the economics of education in mind.

As for the mass media, especially radio and television, their high cost should not be an obstacle to their introduction into our educational system, because they reach more students and can cover areas where the schools have yet to be established. In Thailand, we presently engage in a pre-investment study to see whether, among other things, to use commercial or separate educational stations on a country-wide basis.

In addition to the aforementioned, there are many other possibilities that we can explore. To mention a few, they are: the sharing of facilities among nearby schools, and the revision of curriculum to make it more relevant to students' needs.

To conclude, I would like to emphasize that the reduction of educational costs does not necessarily mean the actual reduction of allocation for education per se, but it should mean the improvement of the methods in implementing a given budget, or, more specifically, it means the efficient organization and management of a school so that it will graduate more students of higher quality. It may even mean that money, men, and materials will have to be increased in order to eliminate wastages resulting in the full realization of our educational goals.

Discussion Summary of Dr. Kaw's paper

Participant: A problem in some countries in Asia that bear heavy French influence, is that there is wastage in education as a consequence of promoting primary teachers who attain a higher degree or who have performed remarkably to the secondary school, and excellent secondary school teachers to higher education. This results in teachers not prepared to t teach in the new assignment, causing educational wastage which could have been avoided by keeping them where they could perform best.

Participant: Is the delivery system for mass primary education that the group conceives of designed for economic development? Who determines the economic objectives? What is the relation between education and economic development? There is need to link educational goals with economic goals.

INNOTECH: Two educators from Indonesia are going to assist the Center in preparing a manual describing a model for setting priorities in national development and for focussing education to the needs of the country.

Participant: In the Philippines primary education receives about 95% of the total national appropriation for education, and 93% of this amount goes to teachers' salaries, leaving very little for instructional materials. There is an attempt to reduce the unfavorable effects of this situation by not necessarily reducing teachers' salaries but by increasing teacher utilization. How does Thailand pay its grade X graduates who help teach primary school students?

Speaker: Since these grade X graduates are considered assistant teachers, they are reflected in the regular budget.

Participant: What is the effect of automatic promotion in Thailand on such causes of wastage as grade repetition and dropping out as well as on functional literacy, including the development of qualities of good citizenship.

Speaker: They are experimenting on automatic promotion in Thailand but have not been successful because they have not invested

enough resources in the experimental schools. However, they are trying to increase these resources.

Participant: When we talk about mass primary education "we are talking about learning, not teaching." When I hear about automatic promotion, I get a feeling that children are being promoted without learning.

Participant: I suggest a complete overhaul of education at all levels. There is a need for national, social and economic objectives and educational goals to be congruent. From a statement of objectives, the outcomes of education should be spelled out. After this has been done, we may worry about school buildings, good management, etc.

Speaker: The automatic promotion as practised in Thailand is not the same as that which is internationally known. Automatic promotion in Thailand is rather an accreditation system for upgrading educational quality. The teacher is allowed to modify the curriculum; in-service training is provided; internal evaluation is required; and the schools are encouraged to use the results of this evaluation to improve instruction. In brief, automatic promotion is raising of educational standards.

Participant: Please elaborate on Thailand's efforts in revising the primary school curriculum to make it more relevant.

Speaker: While they are working on curriculum revision, they have no definite suggestions to make as yet.

Participant: What do we really mean by quality education? Does it mean setting some arbitrary standards of excellence and determining quality of education in terms of how many pupils measure up to them? Or can quality be defined simply as the degree to which instructional objectives are achieved?

Participant: The quality of education would require planning flexibility to allow enough dynamic action to change, so the leadership in individual schools can exercise initiative or innovation and resourcefulness. It implies dynamism in and decentralization of administration of education.

THE PRIMARY PILOT PROJECT (PPP)
for the integration of English, Mathematics and Science

by Mrs. Yeo Lai Cheng
Assistant Director of Education
Ministry of Education
SINGAPORE

BACKGROUND NOTES

1. The Three Crises in Developing Countries

   1.1 Population Explosion resulting in Classroom Explosion.
   1.2 Knowledge Explosion resulting in Curriculum Explosion.
   1.3 Technological Explosion resulting in an ever-widening industrialization gap between developed and developing countries.

2. The Singapore Situation

   Concerning 1.1 Currently we have an on-going and fairly successful family planning programme. We have enough places in school for every child of school-going age, but this good fortune should NOT make us overly satisfied. All Singaporeans, young and old, should know the ACCEPTABLE FAMILY SIZE for Singaporeans that will stabilize the population of Singapore. They should know that action taken or NOT taken will benefit or hit the hopes of a better life for this and subsequent generations of Singaporeans. The time for positive action is now. In this connection the school system is an integral link of the national population control system. There is no syllabus for 'population education' per se. But the rationale for population control shall find its way into lessons in civics and science, history and geography, economics and statistics, physical and health education and home economics.

Concerning 1.2 The traditional reaction to this has been to cram more and more facts and theories into the school timetable. But this cannot go on indefinitely! Perhaps a more realistic approach is to equip a child with the necessarily TOOLS for LEARNING - strong language skills, plus other process skills - which will help him to learn on his own. Facts and theories memorized today may be outdated tomorrow. But language skills (speaking, reading, writing) and process skills (observing, deducing, classifying, interpreting) are learning tools that never date but invariably get sharper with usage. The emphasis therefore should perhaps be LEARNING for FUTURE LEARNING.

Concerning 1.3 English is a functional tool of Science and Technology. If this is so, alternative methods should be tried out to teach it more effectively, if the technological gap is to be closed somewhat, for developing countries.

THE PRIMARY PILOT PROJECT (PPP)

3. A Singapore Solution

In multilingual Singapore it is not unusual for Chinese, Malay or Tamil speaking homes to send their children to English medium schools. If we throw in a handful of Chinese dialects (Cantonese, Hokkien, Hakka, Teochew, etc.) spoken in Singapore homes for good measure, the permutations and combinations thereof produce a challenging linguistic back-drop to effective teaching.

To meet the problems posed in (1.2) and (1.3), we have designed and implemented since January 1971 an experimental Primary Pilot Project (PPP) to integrate the teaching of English, Mathematics and Science in some primary schools. Under this project, these 3 subject areas are deliberately developed in parallel, unit by unit, level by level, with teaching in the language units specially programmed to reinforce and support teaching in the other two. By integrating 3 subjects together, the resultant could perhaps be more "ground covered" in less time in respect of the specified educational objectives.

4. Methods and Means of the PPP

4.1 Learning Language Skills. Wittgenstein has observed that "the limits of my language are the limits of my world." What is language? Language is rooted in SPEECH. And includes the primary stages of production, reception, and interpretation of voiced sounds. WRITING is the act of encoding speech sounds. READING is the act of decoding speech sounds. Both these may be considered as secondary stages in the acquisition of language skills.

PPP pupils are therefore encouraged to speak more. "Man is not born speaking and will remain dumb if deprived of the proper social initiation." Reading and writing follow mastery of the oral aspects of language. In short oracy (speaking) is followed by literacy (reading, writing).

4.2 Speaking Skills. Teaching oracy means reducing 'speaking situations' with a 'sayer' and a 'sayee'. Even if this condition is satisfied, there may be no speech interchange if there is nothing interesting or exciting to talk about! To this end PUPIL MATERIALS have been produced and GAMES and ACTIVITIES from Mathematics and Science have been deliberately designed to feed into 'speaking situations' to stimulate children to want to talk about what they see or do, touch or taste or feel.

4.3 Reading/Writing Skills. Teaching units for reading/writing have been programmed to mesh in with the Oral Language Units. For each primary level a set of TWELVE READERS have been proposed/produced to support the oracy programme. These readers are colour-coded into levels of linguistic difficulty which closely match specific linguistic levels in the oracy programme. Each reader has a child-centered theme, carries a complete 'story', utilizes language items learnt in the oracy programme, and is meant to stimulate a child to read adventurously on his own initiative, and derive more reading confidence thereof.

4.4 Learning Process Skills. The teaching units for Mathematics and Science have been formulated to produce

a programme of learning through guided activities. Children form and develop concepts in Mathematics and Science by handling and doing, weighing and measuring, observing and classifying things in their school environment.

4.5 Classroom into Workroom. Arising from the requirement of (4.2) and (4.4) above, where PPP children are required to TALK about things and DO things, the traditional classroom with 40 children sitting quietly in neat rows facing the blackboard may not be very relevant. PPP children work in groups of 5 to 8 pupils, under a group leader. In such informal groupings every child gets a full quota of "proper social initiation". And the quiet traditional classroom is now a busy workroom with children working and experimenting with purpose and direction.

5. Some Observed Effects of the PPP

Principals and teachers report that their PPP children:

5.1 are very ready and confident to talk with each other, with their teachers/principals, and with school visitors.

5.2 appear to be enjoying their lessons well. Even slow developers show less diffidence in mastering concepts in Mathematics and Science by "understanding through doing".

5.3 are developing qualities of group leadership and group responsibility as a result of group work. In such situations group leaders are responsible for taking out or returning apparatus required for group work, and for initiating and conducting activities in their groups.

6. Evaluation of the PPP

6.1 Evaluation of the PPP may, for convenience, be viewed as a 4-stage development:

6.1.1 Evaluation of the PPP objectives - their suitability, relevance, etc in the Singapore context.

6.1.2 Evaluation of the PPP materials - based on visits to and feedback from schools.

6.1.3 Evaluation of the PPP pupils - their readiness, progress, etc based on behavioural outcomes spelt out in all teaching units.

6.1.4 Evaluation (Psychometric) of the overall PPP System - to determine if 6.1.2 (PPP materials) has in fact brought about 6.1.1 (PPP objectives) as evidenced in the behavioural changes, if any, of 6.1.3 (PPP pupils).

6.2 Concerning 6.1.1 The PPP objectives are in general a composite of the objectives for the teaching of the 3 subjects, English, Maths and Science approved by and under the purview of the Advisory Committee for Curriculum Development.

Concerning 6.1.2 This evaluation is on-going, has been, and still is, the responsibility of the PPP Organizers.

Concerning 6.1.3 This evaluation is on-going, has been, and still is, the responsibility of the class teachers and Principals.

Concerning 6.1.4 Nothing has been done in this connection. An external, third party, psychometric comb-through, with matched controls of PPP/non PPP pupils, teachers, Principals, Schools, etc should be a very interesting, useful, and revealing exercise to indentify quantitatively:

a. the strengths/weaknesses of the PPP and
b. whether the PPP performs any more efficiently (or inefficiently) than other non PPP methods.

6.3 Ideas for Evaluation under 6.1.4

The following are some ideas from "non-specialist laymen"

6.3.1 Converting the objectives of 6.1.1 into suitable behavioural outcomes, based on the syllabuses of the 3 subjects, English, Maths and Science.

6.3.2 Developing instruments, methods, etc to gather evidence of behavioural changes, if any, in matched PPP/non PPP pupils.

6.3.3 Interpreting evidence gathered under 6.3.2.

6.3.4 Feeding interpretations back into 6.1.2 to improve PPP materials in subsequent revisions.

6.3.5 Producing a standard system/mechanism for future evaluations to be administered at various convenient end points of the curriculum cycle.

7. Data on the PPP

7.1 Objectives and Organization (see Appendix).

7.2 Extent of pupil involvement (see Table A for 1971-1973).

7.3 Scope of Teaching Units/Pupil Materials (see Table B for 1971-1973).

TABLE A

PPP PUPILS (1971-1973)

	Primary One				Primary Two				Primary Three			
Year	Eng	Ch	Mly	Total	Eng	Ch	Mly	Total	Eng	Ch	Mly	Total
1971	840	-	29	869	-	-	-	-	-	-	-	-
1972	7200	280	36	7516	840	-	29	869	-	-	-	-
1973	11080	600	12	11692	8960	280	36	9276	920	-	29	949

TABLE B
SCOPE OF PPP MATERIALS

Level	Science	Mathematics	English		
			Oral Language	Reading/ Writing	Pupils Materials
Primary One	Introduction	Unit 1	Unit 1	Unit I	Worksheets Charts
		2	2		
		3	3		
	4	4	4	Unit II	4 'Red Readers
	5	5	5		
	6	6	6		
	7	7	7	Unit III	4 'Blue' Readers
	8	8	8		
	9	9	9		
	10	10	10	Unit IV	4 'Yellow' Readers
Primary Two	11	11	11		
	12	12	12		
	13	13	13	Unit V	4 'Purple' Readers
	14	14	14		
	15	15	15		
	16	16	16	Unit VI	4 'Green' Readers
	17	17	17		
	18	18	18		
	19	19	19	Unit VII	4 'Orange' Readers
	20	20	20		
Primary Three	21	21	21		
	22	22	22		
	23	23	23		
	24	24	24		
	25	25	25		
	26	26	26		
	27	27	27		
	28	28	28		
	29	29	29		
	30	30	30		

LEGENDS:

Areas bounded in: === - work done in 1971
—— - work done in 1972
... - work to be done in 1973

APPENDIX

Ed. 2228/70

MINISTRY OF EDUCATION,
KAY SIANG ROAD,
SINGAPORE, 10.

1st October, 1971.

To: Mr/Mrs/Miss _____
Through: Principal,

_____ Primary School.
All Principals, Primary Schools (English Medium)

Re: Primary Pilot Project (1971-1972)
For Integration of English, Maths, Science
Edun. 2228/70(61) dd 16.9.71

Classes Involved in 1972

1.1 Primary 1 Level: about 100 classes, of which there are 7 CL1 classes, 1 each of ML1 and TL1 and the balance is made up of EL1 classes. (Approximately 4,000 pupils).

1.2 Primary 2 Level: the same 15 classes which participated in the Project at Primary 1 Level, in 1971. (Approximately 600 pupils).

2. Objectives

The purpose of the Project is to produce and try out materials, which will, as far as is possible, integrate the teaching of English, Maths and Science. This means that careful thought will be given to the English needed for Maths and Science learning, and that, conversely, the opportunities provided by Maths and Science for teaching English will be exploited. The materials will be in line with the Revised Syllabuses in these subjects which have been introduced in 1971.

2.1 English: Some general aims for this component of the Project are:-

A. to develop new teaching strategies that will improve the speech of the children;

B. to base the skills of reading and writing on the strong foundation of speech provided by A;

C. to provide a variety of interesting situtations and activities that will stimulate the children's use of English.

2.2 Mathematics and Science: The general aim will be to formulate and produce a programme of teaching through guided activities which will lead children to form and develop concepts in Maths and Science in order to fulfil the principal objective of "learning through understanding".

3. Organization

At Headquarters:-

3.1 This Project started in January 1971 at Primary 1 level under the charge of a group of CEDO advisers and local officers. Teaching materials produced in 1971 will be revised and used again in 1972 in a second run. In 1972 the Project Organizers will also produce teaching materials for Primary 2 level.

3.2 Teaching materials are provided in "Units" intended to last 2 - 3 weeks. It is expected that such materials provided will be revised and improved in the light of experience and feedback, from teachers, at meetings regularly convened for such purposes.

3.3 The Organizers and other officers involved in the Project will visit classes concerned, giving assistance and receiving comments and suggestions. It is hoped that an effective 2-way communication will be established under (3.2) and (3.3).

At Schools:-

3.4 Teachers and Principals in this Project should regard themselves as shareholders in this "education enterprise". As such they should be active contributors to and not passive acceptors of the teaching materials. This is an ideal opportunity to spread our professional wings!

3.5 Project Materials supplied are classified "confidential". Nothing will be sold to pupils/teachers/schools. All items issued are the property of the Ministry of Education, S'pore. As such materials of the Project cannot be published/sold without the permission of this Ministry.

3.6 Block time-tabling may be necessary to accommodate this programme which integrates the 3 subjects of English, Maths and Science.

3.7 Progress reports of pupils in this programme will be made by schools in the usual way, according to their practice in the past.

3.8 Purchases/Orders by schools for 1972:

3.8.1 Book Corners are suggested for project classes. To start these off Principals may wish to purchase a set of 46 books (costing $244/-) per class under this Ministry's offer "Primary School Libraries Project" dd 15.4.71.

3.8.2 Sets of Shapes (Plastic) are required for Maths and Science. A minimum of 2 sets per class is recommended. (Re: Ministry's offer Ed. 37/59 dd 31.7.71).

3.8.3 Textbooks (English, Maths, Science) for pupils in this Project may be purchased when the need arises on an ad hoc basis.

3.8.4 Materials for pre-reading/writing activities will be provided by the Project. It is hoped to supply suitable readers to pupils to support the language component of this programme.

4. Orientation Seminar

A five-day orientation seminar will be held in November for all participants in the project. Participants will be released from their teaching duties for the duration of the seminar. Further details of the seminar will be circulated to the participants in due course.

5. General

The 100 classes of para 1.1 have already been selected by their respective Group Inspectors. Teachers of these classes will attend the seminar at para. 4.

Signed,

(Mrs. Yeo Lai Cheng)
Senior Inspector of Schools/English,
f. Director of Education,
Singapore.

Edun 2228/70 Vol 2

6 Feb 73

Principal

_____ Primary School

Singapore.

PRIMARY PILOT PROJECT, 1973
WOOD DENSITY BLOCKS, BRASS TUBING CHIMES, FLASHCARD HOLDERS

1. Your orders for Wood Density Blocks, Brass Tubing Chimes and Flashcard Holders will be ready for collection from 19 Feb 73 onwards at the Central Supplies and Maintenance Unit. The CSMU is in the Pasir Panjang Vocational Institute at the junction of Alexandra Road and Telok Belangah Road. A sketch map showing the location of CSMU is enclosed.

2. To avoid congestion at the CSMU, kindly collect your orders on the dates specified below. The time of collection is 8.30 am - 12.00 noon and 1.00 pm - 4.00 pm on weekdays and 8.30 am - 12.00 noon on Saturdays.

2.1 Schools in Group I	19 - 21 Feb 73
2.2 Schools in Group II	22 - 23 Feb 73
2.3 Schools in Group III	24 and 26 Feb 73
2.4 Schools in Group IV	27 - 28 Feb 73

Please produce the duplicate of your School Supply Order forms at the time of collection.

3. Thank you for your co-operation.

Signed,

FOK FOOK CHOON
for DIRECTOR OF EDUCATION
MINISTRY OF EDUCATION
SINGAPORE

cc
TO/CSMU
FFC/mw

Ministry of Education
Kay Siang Road
Singapore 10

7 Feb 73

To: _____

Through: Principal,

_____ School

PRIMARY PILOT PROJECT (1971-1973)
WORKSHOP ON PPP READERS (PURPLE SERIES)

1. We are pleased to invite you to participate in the fourth writing workshop on the PPP Readers (Purple Series) for Primary Two children. The workshop is aimed at stimulating ideas and will involve a practical writing session.

2. The workshop will be held on Saturday, 17th February, 1973 (9.00 a.m. - 12 noon) at the Library, Serangoon Garden South School, Kesington Park Road.

3. The Purple Series will consist of four books each of 20-24 pages. It is envisaged that they will cover the following areas:

*Malay/Chinese/Indian or South-east Asian folklore/ history/religion

*An imaginative story or adventure

*A factual or informative account of plants/animals/ everyday themes (e.g. Rain)/socio-economic themes (e.g. Singapore Airport)

*Any other topic of interest to Primary Two children.

4. A list of the twelve PPP Readers for Primary One children is attached for your reference.

5. We do hope you will be able to attend this workshop.

Signed,

K. MENON
ASSISTANT SPECIALIST INSPECTOR/ENGLISH
for DIRECTOR OF EDUCATION
SINGAPORE

KM/jt

Discussion Summary of Mrs. Yeo's Paper

In her introductory remarks Mrs. Yeo Lai Cheng outlined the background which culminated in the implementation of the Primary Pilot Project (PPP) in Singapore. In 1970 the Hon. Minister of Education, Singapore, in declaring open a Teachers' Union Seminar, urged all professionals present to examine where the education system had failed the child and likewise where the child had failed in the education system. Towards the end of 1970 under the Advisory Committee for Curriculum Development (comprising a group of professionals drawn from all levels of the education pyramid) the current exercise in curriculum development was started. With educational objectives clearly defined, the syllabi of all Primary subjects were revised. These revised syllabi differed from the old ones in that now instructional objectives and outcomes were clearly spelt out under the various topics to be taught. Teaching would no longer be teaching to a textbook, but teaching to a syllabus. Since a teacher could now get clear direction from the syllabus, a good and creative teacher might not need more support, but the majority of teachers might still need additional guidance. The PPP was just one of the ways available to help teachers implement the revised syllabuses for the three subjects of English, Mathematics and Science.

Mrs. Yeo also explained that there were a number of pupils who were exposed to the PPP teaching methods "unofficially". This number was later absorbed into the "official" figures, thereby increasing the total.

Participant: Please elaborate on "cost" and "effectiveness."

Speaker: I would rather not comment on effectiveness, but would prefer to wait for psychometric evaluation of the project. Regarding "cost" the project could perhaps be economical if it was found to be effective. Anyway, the project covers only three out of nine subjects in the Primary School Curriculum.

The basis for revision of teaching units is through feedback from teachers and through fortnightly/monthly discussions with them. During these discussions, teachers and organizers try to make the units more "teachable".

Participant: What is the nature of the Readers (pupils books)?

Speaker: In the past the tendency was to depend on one Reader only for the various exercises such as dictation. spelling, reading habits, encourage adventurous reading, provide satisfying and exciting reading materials and above all to inspire reading confidence in the children.

Participant: How do you evaluate "behavioural changes?'

Speaker: They might be tested in respect of the outcomes that were spelt out in the revised syllabi.

If the Project is successful in terms of its specified objectives, the rate at which the pupils can get off the "PPP Chart", perhaps can be a measure of the rate of attainment of those objectives. The class teacher is generally encouraged to follow the children through the consequent curriculum cycle. Thus the chances of dislocation in their lessons are minised. This problem is being monitored.

Currently, the Primary School Leaving Examination is being reoriented to measure more of language and less of rate and recall skills. The PPP is one of the methods available for achieving those outcomes which have been spelt out in the three revised syllabi of English, Mathematics and Science.

Participant: How is the progress of children under the PPP measured?

Speaker: About two years ago the primary school syllabi were revised. In the revised syllabi outcomes to be achieved by the pupils were spelt out in behavioural terms. These syllabi were used on a national basis, i.e., every school in Singapore used the same syllabi. PPP teachers are guided by the PPP team on how to achieve these outcomes through teaching units sent out to them. The progress of the pupils is measured in terms of the outcomes they have achieved. Parents, however, are still being informed of their children's progress in the traditional way.

Singapore realises the necessity to develop instruments of evaluation that are consistent with the outcomes expected of pupils in the Project.

Initially for this project, the Ministry of Education selected schools which are reasonably near the Ministry. These "clinic" schools are not the top-notch schools of Singapore. As for training, the teachers are given some basis at seminars and workshops. The organizers themselves can be said to be undergoing "training" at the same time; there is no past experience to fall back on. Some teachers also attended a week-long Seminar on the subject. Teachers meet regularly (fortnightly) to discuss the units that have just been taught and those that are coming.

No textbooks are used. The only teaching materials are the teaching units. The "readers" are not textbooks in the traditional sense but are more a cross between a textbook and a supplementary library book. They are geared to the oracy programme and are aimed at encouraging children to read on their own. They are in the form of booklets and are colourfully illustrated.

Regarding the authorship of the Readers, members of the PPP team are responsible for the overall reading programme, but the readers themselves are often written by teachers and their contributions are acknowledged.

Participant: Will Singapore expand this programme to include other subjects in the Primary School Curriculum when it is considered that the PPP is a success?

Speaker: The PPP covers only three out of nine subjects and it has still to be evaluated. As for extending the idea of an integrated approach, the Second Language Exposure Time was started this year whereby teachers are encouraged to teach other subjects in the second language.

MEETING THE SOCIAL DEMAND FOR EDUCATION AT THE PRIMARY LEVEL IN THE PHILIPPINES

by Dr. Liceria Brillantes Soriano
Director, Bureau of Public Schools
Department of Education
Manila, PHILIPPINES

INTRODUCTION

The kaleidoscopic nature of society requires a continual assessment and adjustment of education to make it adequately meet the social demand for it. Education that does not progressively adjust to change so diminishes its potency as a factor in individual and social development.

Philippine society is currently undergoing rapid change as a consequence of President Ferdinand E. Marcos' massive social reform movement which is addressed to building what he has called a "new society."

This movement has been operationalized through an integrated program which has been succinctly summed up in a slogan PLEDGES - P for peace and order, L for land reform, E for economic development, D for developement of moral values, G for government reform, E for Educational reform, and S for social service. The slogan effectively serves as a cue to the objectives to which all government and private efforts need to be directed in order to accelerate the emergence of the New Society.

These objectives are congruent with the national development goals to which educational objectives must be inextricably linked, if the school is to maximize its contribution to social development.

By virtue of its vast clientele, primary education can contribute to national progress, since social development is a cumulation of individual development. This justifies the rising demand for it.

The rapidly increasing social demand for primary education in the Philippines is manifested in the exploding primary school enrolment, which has grown from 150,000 in 1901 to about nine million this school year. In order to adequately fulfill this growing social demand for primary education, we have matched the steadily increasing governments

appropriation and private support for it with appropriate and timely renovation and innovation to adapt the primary school curriculum to emerging needs.

OBJECTIVES OF PRIMARY EDUCATION

Primary education in the Philippines normally means going through the primary school cycle consisting of grades one through six. Lately, however, it has been interpreted to subsume not only formal schooling but also its nonformal equivalent, although efforts in the direction of the latter have been rather diffuse.

To meet the social demand for education at the primary level Philippine public and private primary schools design their programs for providing pupils with the knowledge, skills and attitudes basic to personal development and modern living in an unceasingly expanding society. They structure their programs to provide literacy and to develop individual cognitive power, numerical manipulation and communication skills.

In the light of its functions, primary education specifically means acquiring fundamental literacy and numeracy, awakening of the individual's learning potential and power of reasoning, developing a sense of citizenship, and pre-occupational training upon which specific vocational skills can be further built.

In terms of the imperatives of the emerging New Society, primary education now encompasses basic instruction in fertility limitation, land reform, taxation, health and sanitation, food and nutrition, law and order, economic nationalism, conversation of natural resources, cooperatives, drug addiction prevention, environmental pollution, and agricultural productivity.

As a result of primary education, an individual is expected to widen the range and improve the quality of his social participation, be more responsive to change, be rational in his decisions, and have increased alternatives for employment.

From the vantage point of individual development, the most significant benefit that primary education brings is increased alternatives for employment. In all industrial sectors of the country, there is a great number of laborers with primary education. Ninety-two per cent of unpaid family workers on farms and in family enterprises have not gone beyond primary school. In non-agricultural and wage-salary employment,

there is a large portion of those with grade five and six education. This implies that alternatives for employment in paid non-farm and salaried positions are mostly available to individuals who have had primary education.

MEETING THE SOCIAL DEMAND FOR PRIMARY EDUCATION

Approximately one out of five of the thirty-eight million Filipinos is in primary school. This points to the enormity of our primary school system, which in turn makes any problem that confronts it necessarily tremendous.

One of the persistent problems that has plagued the system is a high dropout rate which accounts for considerable educational wastage. In spite of the steady decrease in the dropout rate resulting from the concerted efforts to increase the holding power of the schools, early school leaving continues to be a serious problem in the primary school.

The existence of empirical evidence that indicates that failure or retention of pupils exacerbates the dropout problem prompted us to adopt a nonretention plan, now popularly called the continuous progression scheme, in the public schools in 1971.

The scheme is designed to provide opportunities for the child to progress from grade to grade without needless repetition. It requires the structuring of educational experiences in such a way that his optimum growth will be insured. This means that his uniqueness as an individual is taken into account.

The major thrust of the continuous progression scheme is what Fred T. Wilhelm calls the intellectual and personal potentiation of the young. This blossoming up, so to speak, is brought about through individuation and humanization in the classroom.

We have been retraining our teachers to educate children within a rich and varied pattern of stimulations in order to enhance their intellectual potentiation. We have emphasized the use of inquiry-oriented strategies in the teaching of mathematics, science, health and social studies in order to produce individuals who possess competence in problem solving and who can react rationally to a wide range of stimuli. We have given impetus to reading skill development and teaching children to learn how to learn in order to better equip them for independent learning, for coping with knowledge explosion, and for adapting to change via the printed word.

We have likewise been retraining our teachers to engender the personal potentiation of the children by demonstrating how to help them develop a wholesome personality, moral purpose and nobility of character by precept and example. We have made our curriculum value-oriented by enriching it with objectives and activities directed to the development of values emphasized in the New Society. These include habits of honesty, thrift and industry; cooperation, obedience to rules and regulations, cleanliness and orderliness, love for and pride in one's country and products, and promptness and punctuality -- all of which are contributory to national discipline, a major New Society aspiration.

We have provided educational opportunities for the internalization and externalization of such values through practical activities and projects such as those which children may undertake under the nation-wide Youth Civic Action Program, which the Department of Education and Culture launched this school year.

In this Program, primary school children engage in civic action projects which are integrated with the curriculum and addressed to the amelioration of living conditions in their community. To make available larger blocks of time for work on such projects, innovative scheduling has been adopted.

One common scheme is popularly called the "50-50" or "half-half" plan in which academic subjects are taken up in the morning so that the whole afternoon may be devoted to civic action work or vice versa. This scheme has been found to produce greater impact on community development than doing civic action work one period a day five times a week. Primary schools generally follow the "50-50" plan once a week, staggering its use to allow greater utilization of scarce school resources.

The aspects of blossoming up, i.e., intellectual and personal potentiation, jibe with the cognitive and affective domains in the "new" social studies in which more stimulating enriching, and ennobling strategies are now being employed as a result of our efforts to upgrade teaching during the past five years.

To foster intellectual and personal potentiation, which primary education seeks to achieve through the continuous progression scheme, we emphasize individuation and humanization in the classroom.

Individuation is achieved within a heterogenous context. It is made possible by following the slogan of "homogeneity in heterogeneity" in the classroom. It is intended to turn out individuals who feel secure because

they have respect for themselves as a consequence of their awareness not only of their weaknesses but also of their strengths, and who are capable of success because they realize that they have a fair share of God's gifts. Learning in our primary schools has now generally become both an edifying and a pleasant experience because the child is spared the frustration and humiliation of being compared with his peers, since emphasis is on individual progress rather than on comparative performance.

Since individual progress rather than mere attainment of arbitary minimum standards is the goal in the continuous progression scheme, we have reexamined and modified our practices and strategies as to make this goal more feasible of attainment.

We have reoriented our evaluative methods and are gradually eliminating percentage ratings in favor of more meaningful modes of reporting progress. We are now veering away from norm-referenced measures and gravitating towards the more valid criterion-referenced measures in plotting pupil progress. It has not been easy to disabuse our teachers' minds of the sanctity of the normal curve in the assignment of marks, but we have made a headstart in this direction. In reporting pupil progress, we are now making greater use of teacher-parent conferences. In some schools, teachers have even gone further and included the pupil in such conferences. We have revised our pupil progress report card and adopted a criteria-oriented pattern. The evaluation of pupil progress now involves a comparison of a pupil's present and past performance, not the performance of others. Pupil judgment is, thus, generally no longer a dehumanizing process in our schools.

We intend to improve the operationalization of individuation in our schools through mastery learning strategies. These require that objectives be stated in specific and behavioral terms, that complex learning tasks be broken into component tasks and sequenced according to difficulty or logic, and that formative and summative evaluation be employed and on basis of their results, correctives be introduced. We have plans for a series of in-service training programs designed to acquaint our supervisors and teachers with mastery learning strategies.

By helping the child maximize achievement through individuation, we humanize instruction since we help him to be what he can be. This is our definition of quality education.

Humaneness must permeate all educative effort if our schools are to adequately meet the social demand for primary education. We realize, as Macdonald states, that if the school's program is so structured as to make the individual subservient to the collective group and to carry out the role it is assigned, schooling becomes a sham, an empty inhumane enterprise. We believe with Macdonald that if the school helps the individual to exericise his own free choice, to develop his own potentialities for his own sake alone, to serve the group collectively because he has freedom to do so rather than because of pressure to conform or to achieve for the group's sake, humaneness pervades the school. Thus, we put premium on potentiation since it serves as the key to freedom, which according to Macdonald, is the essence of the humane school - "freedom as a process by which one can himself be free."

For most of our primary school population, primary education is terminal. This makes imperative a curriculum that provides for pre-occupational training which prepares the individual for gainful work.

We have adopted a work-oriented curriculum designed to develop desirable attitudes toward work and useful work skills. Teachers integrate work with other subjects of the curriculum in order to strengthen work skills developed during the regular work education or practical arts or elementary agriculture period.

Three approaches are used to develop work skills, namely, the curriculum enrichment approach, the core curriculum approach, and the theory and practice approach.

In the curriculum enrichment approach, work education is injected into lessons in different subject areas which lend themselves easily to it. In the core curriculum approach, a "work" project or activity serves as the take-off for relevant lessons in other subjects. In the theory and practice approach, classroom learnings are tested in practical work situations. Innovative scheduling is encouraged to allow ample time for the implementation of work-oriented projects, which are carried out within the confines of the school. The "50-50" approach, which I discussed earlier, is one of the more commonly adopted patterns in this regard.

Intensive implementation of our work-oriented curriculum is calculated to increase children's alternatives for employment in later life. In fact, as a result of our work-oriented curriculum many of our children in the barrios and other depressed areas earn money through "work" projects in school.

For instance, in line with the government's Green Revolution, school children have produced, sold vegetables and generated money for their school expenses. The children's Green Revolution projects offer situations for teaching, besides work skills, thrift, food and nutrition, cooperation, communication skills and a number of other learning units. Such integration of learning makes for economy and efficiency in teaching.

The present primary school curriculum has changed through renovation and innovation. It has become not only work and value-oriented but development-oriented as well. It has been enriched to make it more supportive of the goals of the New Society. It is continually being adjusted to meet emerging social demands. Thus, it is as dynamic as life itself, which it purports to enrich.

In all Asia, the pace of change has been steadily accelerating as a consequence of the advent of modern science and technology and the change in demographic structures.

As society changes, the aspirations of the people continue to rise, their needs continue to increase, and the primary school population continues to grow. Primary education will change as these changes occur. It will change, for change is the valid way of adjusting to change; and adjusting to change is the assurance that the social demand for education at the primary level is adequately met.

Discussion Summary of Dr. Soriano's Paper

In the discussion following her paper Dr. Soriano explains: The primary objective at the Primary Level in the Philippines is basic functional literacy. Of all the children entering Grade I over 50% reached Grade VI. A Continuous Progress Scheme has been introduced to reduce the dropout rate which is highest at Grade V level. The Barrio schools are also geared to this need.

Children learn at their own rate and every child has his own capacity to learn. The Criterion Reference Test is designed to show what behaviour a child would exhibit in Mathematics, for instance, after six years of education. The objectives are in terms of behaviour and this is the criterion for evaluation.

Participant: Please elaborate on standards and quality control.

Speaker: Grades are marked towards a certain standard, but the child is no longer compared against his peers and therefore is spared the agony of being inferior.

Parent-Teacher Associations have been long established in the Philippines, though at the initial stages parents were quite reluctant to come forward. But through meetings and discussions they are now more willing to participate. This has not been easy though.

By the "50 - 50 Plan" which has been adopted this year, the pupils come back in the afternoon once a week to have some work experience which are related to their academic learning. In so doing, alternatives for work are opened.

Participant: The definition of quality education is still not clear. Quality education is one which provides opportunities for each individual to develop his capacities. If what Dr. Soriano proposes in her paper is right in all respects and if the Philippines can achieve her goal, then it would be a major achievement. However, there are the qualitative aspects of the problem which have to be considered especially when we have to take into account the tremendous population growth. Can the existing system be made to reach the youngsters, by way of making the curriculum more meaningful? Does the

Philippine Government indeed have the resources to carry out this tremendous task along the lines proposed by Dr. Soriano?

Speaker: The Philippines School System is already functioning beyond expectations. Quantity wise there is nothing to worry about. The building construction programme which is being looked into by the Philippine Government with contributions from AID and the American Peace Corps is already massive. This includes the construction of typhoon resistant school buildings. 60 percent of school buildings are good. Only 40 percent more need attention, and this could be solved within the next ten years.

There is no doubt that as the population increases the demand will also rise. To overcome this, more sources of revenue are being tapped. I am quite optimistic that the Philippine Government will be able to meet this demand.

There is also an over supply of teachers in the Philippines. In 1974 it is anticipated that there will be a surplus of about 200,000

There is a move to get away from the usual requirement of one textbook per pupil per subject. Instead, it is proposed to produce rich instructional materials. Help from specialists in the universities are being sought in the various subjects.

Teacher training institutions are also being geared accordingly so that as many pupils as possible could be retained in schools thus preventing dropouts. Teachers arebeing acquainted with new instructional materials. The teacher will have to cater for the individual capacity of the child, and she will have to work much harder than before.

Lack of facilities, buildings, equipments etc is always a reality. But the government is aware of this and is tapping additional resources and is continually searching for better facilities.

At the moment the overall budget for education in the

Philippines is 30% of the National budget. The per capita cost to keep a pupil in the primary school is 120 pesos (US$20/-) per year. I would like to see the existing teacher-pupil ratio of 1 : 31 reduced to 1 : 45. I am hopeful that a solution will come or can be found.

METHOD OF DEALING WITH THE PROBLEM OF DEVELOPING AN EFFECTIVE AND ECONOMICAL DELIVERY SYSTEM FOR PRIMARY EDUCATION

by Dr. Atan B. Long
Faculty of Education - University of Malaya
Kuala Lumpur, MALAYSIA

INTRODUCTION:

The meeting of Ministers of Education of Asian Member States in Bangkok in 1962 adopted the Karachi Plan which provide free compulsory education for a minimum of seven years. In another meeting which was held in Tokyo in April 1962 the Ministers of Education of Asian Member States decided that the Karachi Plan should be extended to cover all levels of education.

In this Seminar we are discussing methods of developing an effective and economical delivery system for mass primary education in our region. At first glance the two factors to be discussed seem to be contradictory, for how can we get good effects and results of education without incurring a large expenditure, especially when we are aiming at providing education for all individuals. However, if we mean by economical as getting maxium results and effects out of what we spend on education, tne two factors are the desirable goals to be achieved.

It is stated in the Declaration on the Rights of the Child that every child must receive education, but we find quite a large percentage of school age children did not have the opportunity to attend schools. Furthermore, for those who have entered schools the rate of dropouts is great. Reports from the Technical Seminar in Educational Wastage and School Dropouts provided by the Ministry of Education Malaysia indicated that:

1. Dropouts are higher in rural than in urban schools.
2. Schools which are understaffed or are staffed by unqualified teachers tend to have a higher rate of dropouts.
3. The rate of dropouts is higher in small size schools.

In general the report indicated that "schools in rural and remote areas are genrally small and the staffing position and the provision of various educational facilities in such schools are invariably inferior to schools

in urban areas where schools are usually of larger size."

From this report we can conclude that in countries which have mostly rural settings, there is no equal opportunity in education. Those who are rich and domiciled in urban areas will always benefit from the good facilities provided by the urban schools while those from rural areas are disadvantaged by poor educational facilities. We realize that efforts are made in sending good students from rural areas to urban and hostelised schools for secondary education, but we must also realize that, with the current traditional method of delivery for primary education, a lot of waste has been incurred and the many potentially talented individuals have been deprived of chances for becoming good and useful citizens due to the inequality and poor quality of education they receive in the formative stage of their development.

THE TRADITIONAL PRACTICE OF BRINGING SCHOOL TO CHILDREN:

"Bringing school to children" means building schools in rural areas. This traditional concept is based on "convenience" for the pupils to attend school. As a result of that we find every community has a small school of 100 to 200 pupils each. However, since the pattern of settlement in most of the rural areas is string-like along a road or river, children still have to travel to school for miles once in the early morning and once again during the heat of afternoon sun. A lot of time and energy has been wasted especially for the small children.

Because of the large number of small schools in the rural areas, the financial aid provided by the government is spread too thin. The outcome is that the schools in rural areas do not have enough money to buy educational facilities for the pupils. Furthermore lack of utilities such as electricity and running water hampered their opportunity in reaping the fruits of modern educational technology and maintaining healthy life practices.

It has also been a recurrent problem regarding the posting and transfer of teachers to rural schools. Most of the teachers do not like to be posted to rural schools and, if they are forced to, they usually commute from town to rural areas and, as a result of that, their performance is far from satisfactory. Usually they come to school late and leave school as soon as the class is over. The feeling of attachment to school and devotion to the profession is lacking due to a feeling of frustration. Since teachers in rural schools mostly live far away from the rural

community, any hope of getting their services in improving the quality of life is not likely.

It seems that there is a great desire for developing countries to achieve a modernization of their ways of life. Modernization can only be achieved when a suitable state of mind is present among the individuals in a society. In another word, a certain kind of awakening, a renaissance, must be achieved before certain actions can develop. This kind of awakening can be accomplished through education if delivery of education is really effective.

The aims of primary education are not merely abolishing illiteracy, acquiring basis skills and concepts, building healthy habits,acquisition of civic consciousness, building moral and aesthetic values; but also promoting an appropriate mental state and proper attitude toward modernization, i.e. to foster higher aspirations, to build the spirit of competitiveness, creating both independance in thought and creative thinking. I believe these are also the aims of primary education in developing countries, but the problem rests with the present practice of "bringing schools to pupils", by placing schools among people steeped in the traditionalway of life will the effect of the results of schooling be felt at all. From my experienceand observation, schooling makes very little impression on the people in rural areas. Some of them even question the usefulness of sending their children to school. This, I believe, arose from two factors. Firstly, the environment in rural areas is so overwhelming that it stifles whatever effects are generated by education. It is not unusual that some teachers who are placed in rural areas adopt the local way of life and attitudes instead of changing the way of life of the community.

Secondly, children always experience the conflicts between the two cultures which they encounter -- one of which they learn in school and the other is experienced by the reality of life they face at home. Since what they experience at home is concrete and realistic while the teaching in school is more intangible, the conflict is always resolved by discarding what they learn in school and by retaining what they concretely experienced. Consequently, the effect of education in rural areas has made little impact on the life of individuals and they, generation after generation, are left farther and farther behind and the rift between rural and urban people continuously gets wider.

SUGGESTIONS FOR GETTING EFFECTIVE AND ECONOMICAL DELIVERY OF PRIMARY EDUCATION:

In order to get good and lasting effects from education, factors which enchance the effect of education should be promoted and counter-acting elements should be minimized. If we desire that our younger generation be prepared for the modern world, they should be raised and exposed to that kind of environment early in life, and the negative influences of their parents should be reduced as much as possible. If we accept the role of teachers and schools as modernisation agents then children should spend more time in school and have more contacts with teachers. Thus whatever they have learned in school can be put into practice in real life. Furthermore, in the eyes of children whatever is taught in school is not merely theories which cannot be put into practice, but rather for learning which they can test its relevance in real life.

In addition to the conducive environment in which the student should be exposed to learning, modern technologies and other means of educational aids such as ETV, programmed instruction equipment, laboratories, libraries and other equipment should be used in order to facilitate learning and maximize the development of the individual child. Research has also indicated the desirability of providing individualized instruction to individual children according to their abilities. Although it has been shown that grouping children according to "general" abilities will produce some undersirable outcomes, grouping children according to their ability in each subject matter will provide them with the opportunity to excel in the subjects of his strength while at the same time providing guidance and help in their weaknesses. Their identification with their group of peers can still be maintained through having a "home classroom" and a "class teacher" where they can come for general assistance.

All these desirable facilities and activities can only be acquired and carried out economically in larger schools where a larger amount of financial aid is available.

As I have pointed out before, economy should not be measured only in terms of how much money is spent on a particular project, but how effective the result is and how much savings can be achieved through adopting and implementing certain methods or techniques.

It is desirable to make schooling an enjoyable experience and children's time and energy should not be wasted in coming to school. Learning

should be made a part of their lives. Children's time and energy can be saved if provisions are made for students to live in schools most of their schooling days while they can spend their holidays and weekends with their families at home.

It has also been pointed out that dissatisfaction among teachers regarding their working conditions affect their performance in schools. Most of the grievances are due to their being transferred to rural schools while they live in urban or suburban areas where they can get better education for their own children. Because they are commuting to their schools everyday, they cannot devote their time to the school activities outside school hours. If the teachers are domiciled near the schools where they work, they can be persuaded to spend more time with school activities.

After considering all these factors, it seems that there is a great need for a change in the method of delivery for mass primary education in our countries. We indicated that the traditional way of bringing schools to children did not solve the problem of transportation for the children, but on the other hand created dissatisfaction among teachers, reducing the effect of education among the pupils. And worst still, the traditional way of education has created unequal opportunity in education between children in rural and urban areas. In fact this situation viewed as a whole, appears as if the governments effort to provide education for the people is a half-hearted effort.

I feel that the method of delivery of mass primary education in the future should be directed at "bringing children to school" rather than the reverse. The concept requires the building of bigger schools which can accommodate between 1,500 and 2,000 primary school children for whom a major proportion of them who are of some distance away from schools would stay in school hostels. These schools should be built in central locations near towns or sub-district levels where urban facilities are easily available. These schools should be equiped with playing fields, gymnasia, libraries, laboratories, health and dental clinics, hobbies, and other educational facilities.

I anticipate that the main argument against establishing this kind of schools is that the government concerned has to spend a lot of money to build and maintain these schools and to provide food for the children staying in hostels. Let us look further into this matter.

If we take the Malaysian situation as a model, we find the following

situation. Every assisted school receives annual recurrent expenditure based on the number of pupils enrolled during the year plus one-tenth of the amount of recurrent expenditure for special expenditure. Schools with 150 pupils or less will get a minimum of $600 recurrent expenditure and $60 special expenditure per annum. Schools with 150 and 500 pupils will get $4 per pupil for the number above the first 150 and schools with more than 500 pupils will get $3.50 per pupil for the number above 500. Thus a school for 1,500 pupils will get a total of more than $6,000 contribution from the government while a school of 150 pupils will get only $600 annually. Surely schools with larger enrolment can afford to purchase many useful teaching aids and equipment, and these hardwares can accummulate over the years. But what can a school with $600 annual income buy?

Although the cost of a school campus which can accommodate children of this number is estimated to be about $2 million dollars; but these campuses need not necessarily to be built within one year. Perhaps this kind of project can be completed within the space of 10 or 15 years. These buildings can easily last for at least between 10 to 15 decades. Furthermore, with the opening of these schools, the government would not have to maintain the smaller schools in the surrounding areas. Thus the expenditure for these latter schools can be devoted for the maintainance of the centralized schools.

Another main item which involve a considerable expenditure is the provisior of foodstuff to pupils staying in hostels. No doubt this will inflate the school budget but in this situation the nutrition and quality of food provided for the pupils can be controlled and a well-balanced nutrition can be provided for the children. Parents contribution should be sought and if they cannot afford to pay in cash they can pay in kind which the school can auction occasionally. Pupils also can supplement the food provided for them through their own efforts in gardening and poultry rearing where they can put what they have learned into practice.

I would reiterate the advantages that we can gain from this kind of system of primary education. Since they are living and learning together under the supervision of teachers most of the time, a more conducive learning environment can be created and the negative influence of parents can be minimized. Thus the effect of education can be maximized. Besides this, many other innovations in teaching and learning can be carried out. A more meaningful individualized system of teaching and learning can be conducted using modern teaching aids, and children can devote

more time to study rather than spending time on the road or helping their parents in the field. This does not mean, as I have pointed out before, that they are going to be uprooted entirely from their families because during the weekends and holidays children will be encouraged to go home and to gain experience in the life of their families.

Textbook problems which are perennial to the parents can be solved partly through the introduction of school libraries where students can study using the references and textbooks available. In this way children are encouraged to be independent and will be able to pursue their interest in education in an environment conducive to learning. For the teachers too, satisfactory working conditions will encourage them to work better and devote more time to the school and in guiding children in the learning process.

I believe that, with this system of concentrated effort toward providing mass primary education, the objectives of the Karachi Plan will not only be achieved in terms of quantity but in terms of quality as well.

Discussion Summary of Dr. Atan's Paper

Participant: Would the idea of taking children from home to learn in the big hostelized school create a crucial cultural crisis resulting in a dichotomy? Since in Asia, family institution is strong, then, why not merge the school and family into one? Should we prepare to educate the parents? If so, would non-formal approach be appropriate?

Speaker: This idea is intended to be "revolutionary", but it is also stressed in the paper that we would not uproot the child to this type of school. In other words we should maximize education by building up one big primary school rather than creating many small ones. The learning process and products would be geared towards practical, realistic and the enriching of the child's experiences towards modernization.

Participant: The costs of this kind of education - both capital and operation, in the light of similar experiences in Thailand, are prohibitive. The outcomes have not been satisfactory. Most children, after finishing primary schooling, prefer to go to secondary school, rather than staying in their respective communities. We even have to support them further in teaching training with the hope that they would go back to teach in their communities, but in reality they prefer to migrate to work in urban areas.

Participant: The two inter-relating factors - economy and effectiveness can be interpreted differently. But the measure attained from this should help us securing cheap or low cost school. Would there be any such measure? If there is any, the further question is that it should not depart from our respective culture. The child, after schooling, should not go back to their villages as a stranger. So, should we mobilize modernization in line with our respective national situations and culture?

Speaker: The question of alienating the child from his community does not arise because culture and way of life will be taught in school. The school should introduce modernization through the new curriculum.

Participant: We should develop the school with teachers as change agents. What we teach the child at school should be related to his family and community as well as the up-to-date knowledge. The educational process should be a gradual accumulation of the total values reflected within the community, that is, from parents, teachers, bronzes and other community leaders.

Participant: Research finding in the U. S. shows that the child from the slum areas, before going to school, already absorbs many things from home and the environment. In many cases, it is late for the school to effect change. Then, should we be aware of family education and pre-primary education?

It is true that drop out rates in the rural schools outnumber their urban counterparts. But the graver problem is the "lock out" one. Drop out is the problem concerning economy and irrelevancy of curricula which would be relatively not so significant compared with the "lock out" problem of "how can we find facilities for children and adults to learn?"

The idea of promoting competitive capability in the rural school is good but may be misleading. This is because research findings indicate that migrations from rural to urban areas will generate further problems of housing, employment, sanitations, etc.

Speaker: Though educating the child beyond 5 years old is difficult, it is our firm intention to accomplish our educational goals no matter how difficult it is. One way of attracting the child to come to school is by creating pleasant school environments and conducive teaching-learning atmosphere may help solve the drop out problem. Improvement of community condition would not only help education in general but would also help reducing migration from rural to urban areas.

Participant: We should not equate education and formal schooling. Education can be broadly defined as the behavioral changes, the skills, and the attitudes which are developed

as the individual interacts with his environment. Before coming to school the child has already been educated in many ways and throughout his formal schooling he will continue to be educated in great measure by non-school environmental forces. The capability to change behavior - to educate - does not rest with the school alone. Only a relatively small proportion of total learning takes place in the formal school classroom.

Influence of the family (described by the speaker as a negative factor) is not the only environmental influence affecting learning. The community, the play-group, the church are but a few of these other influences. The family and the parents cannot be ignored. Instead of trying to isolate or neutralize the family, described as a negative influence, the school should try to reach the parents in ways which will make their influence constructive. We have to take into account parental expectations in setting educational objectives.

Speaker: Though non-formal education is very important, effort should be made to stress formal education especially in terms of long range outcomes.

Participant: Negative attitudes from parents may occur from the idea of taking the child from his family to the hostelized school. The encouragement of the child to earn some income while at school by helping poultry raising, gardening, etc., could be accepted by his parents as it is in line with the philosophy of community education. However, the attempt to seek financial contribution from parents may be a contrast to the policy of free primary education.

Speaker: I agree with the idea of developing education to embrace both the learning from community and in school, because a rich environment can induce effective educational development. Nevertheless, I still doubt how much non-formal education is better than formal schooling. I believe that parents can play important roles in helping the school activities and curriculum development. This would help provide an effective delivery system.

Participant: The idea of a consolidated school is good, but it costs a tremendous amount of money. Its strengths lie in the fact that it provides a continuous context of learning in the hostel and teachers can monitor the upgrading of the child's learning closely and conveniently.

The defect, however, is that this type of school does not "carry over" things the child learns to the child's home immediately and directly.

The idea of consolidated schools has advantages, but it costs a tremendous amount of money. Some of these advantages are that it affords the children a continuous contact with one another and such interactions are a help to learning. The close association with the teacher and guidance people in the boarding schools is something desirable too, as well as the possibility of their engaging in cooperative projects and other endeavours.

Participant: There is merit in Dr. Atan Long's proposal, that is, some way must be found to "bringing the children to the schools" instead of "bringing the school to the children" as we are now doing. According to the speaker the best way to go about this is to build consolidated schools nearby the town to cater for 1500 - 200 pupils. The schools should be equiped with playing field, gymnasium, libraries, hostels, laboratories, health and dental clinics, hobbies and other educational facilities. It would certainly be marvelous if it could provide this for the children.

What Dr. Atan is implying in making such a proposal is that the new scheme may in the long run prove to be cheaper. This is pretty much in line with Dr. Kaw's contention that sometimes an initial investment may be high but will prove to be more economical in the long run. As a matter of fact the contemplated school buildings will last some 10 - 15 decades.

Another implication of the proposal is that the consolidated school will provide equal learning opportunities to the children: they will be living together in hostels, enjoying the same food and the same facilities, educational or

otherwise.

Finally, it seems to be Dr. Atan's view that formal education will stay with us for a long while yet. As a consequence, we must try and make formal education, which we know better than anything else, do as good a job as it can do. Also, it goes without saying that, in trying to do a better job in formal education, the curriculum, the teaching methods, and so on, are ours to decide, "ours" meaning the government, the teachers and parents.

COMMUNITY SCHOOL AS AN APPROACH TO EFFECTIVE AND ECONOMIC DELIVERY OF MASS PRIMARY EDUCATION

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INTRODUCTION

I know what I am going to say contains little or nothing new.

Community school is an old concept spread out by UNESCO since the end of the world war II. Many countries in Latin America, in Africa, in Asia had put it into application according to their respective conditions of life with more or less conviction. In Asia, all the countries are also influenced of this concept. The first country who got more experiences in community school was Philippines with his barrio schools and his Bayambang training centre.

In 1963, the UNESCO institute for Education in Hamburg had organized an international conference on community school.

In 1968, the same institute convened 23 experts, specialists in Education in Africa, Asia, Europe, Latin America, and U.S.A. to examine the problems concerning the structure and functioning of Community schools in developing countries ...

All of them were concerned, though in very various capacities, with education in the so called developing countries of the world, and all correspondingly worried by the ever-widening gap between the promises held out by educators and the performance of the system which they have created and now administer. They are convinced that in many contexts a school should be more than a place to which children go for instruction during certain hours of the day, that it should be so involved with the life of the community from which its children come each morning and to which they return each night, that nothing which is of interest or value to the community should be regarded as alien to the school's function and that reform of individual schools or better still of educational systems to take account of this view would prove more rewarding than pursuit of the objectives commonly set out by the educational planners.

Before tackling again the concept of community school, it is worth to go over some constraints and deficiencies on present schools and educational systems.

EDUCATIONAL ASPECTS IN ASIA

In the last decade following the end of the world war II came a new era in the history of Asia. The acquisition of independence has answered to the political aspirations of people and implied almost simultaneously to the national governments two heavy tasks:

- Consolidating political independences;
- Putting an end to the social and economic stagnation which characterized the preceding period.

The revolution caused by this rising hope was expressed in terms of great pressure tending to reach the social and economic level of the developed countries and the planning was adopted as a political tool of development.

With this stimulus, the economic aspects of those countries had got an average increase of 4.2% about 4 times more than during half the preceding century.

Substantial progress was equally accomplished in the field of health, of rural and community development and social welfare. The development in the field of education is more evident. The school access is widely open. Moveover, the education becomes an important factor of economic progress and a mean which instigates social changes. However this education needs have not only the economic character. The countries of the region are deeply attached to the conservation and to the enrichment of moral, esthetic, cultural values on which their way of life was founded during centuries. They believe that education can play the role of catalyzer of the cultural renascence which conciliates the traditional values and the necessity of economic, technical and social changes. It contributes very strongly to the strengthening of national unity and social cohesion.

According to the statistics of UNESCO, the region is characterized essentially by the huge increase of population. During the 1950's the rate of total population increase passes from 10% the rate of the ten previous years to almost 20% fort 1950 - 60. In 1960, the population of the countries of the region amounted to 824 millions and it will reach 1.370 millions in 1980. With the projection of the rate of population increase, it will be doubled during the period 1960 - 2000.

This rapid increase is due to the substantial reduction of mortality rate while the birth rate is always rising.

The rising of the birth rate directly affects the population structure. In Asia, almost 42% are less than 15 years old, instead of 32% in North America, and 26% in Europe.

The effort to achieve in the field of education is determined by the dimension of population of school age. In 1960, the age group from 6 to 12 years old represented 18% of the total population, from 13 to 17 years old 10%, from 18 to 21 years oid 7%. So the population from 6 to 21 years constituted 35% of the total, about 288 millions in 1960 to about 514 millions in 1980. With these population of school age (35% of the total population), the education system of the Asian countries has to support a heavier burden than the developed untries where the percentage of school age oppulation is relatively small. The rate of population growth is about 2.5%. The development and expansion of educational facilities must be sufficient enough in order to receive all the children of school age in the same time to safeguard those who have no opportunities to go to school.

The slowness of school progress and the unequal repartition during previous decades are reflected in the present instruction level of the population of the region. The number of illiterates in Asia is over 250 million. The illiteracy rate of among 16 countries gathering about 88% of the total population of the region are: 80% and more during 1962-63 in five countries representing 18% of the total population; 60 to 80% in two countries (almost 53% of the total population); 40 to 50% in 4 countries (5% of the total); 20 to 40% in five countries (11% of the total).

The illiteracy is more frequent for the women. In the whole, 54% of men and 79% of women are illiterates.

The illiteracy among the active population (25 to 54 years old) continues to be a great problem.

In 5 countries the rates of illiteracy among the active population are: 70% for the men and more than 90% for the women.

In 2 countries, 60% for the men and 85% for the women.

In other countries, 20 to 40% for the men and 40 to 70% for the women.

In all the countries of the region which had put an important part of their budget in education, 10 to 15% of the population finished their primary and only 4 to 6% their secondary education.

Moveover, the result of the education is still rather quantitative than qualitative.

CASES AGAINST SCHOOLS AND EDUCATIONAL SYSTEMS

Besides the aspects above quoted, Everett Reimer stated in his book "School is dead" as follows:

"Most of the children of world are not in school. Most of those who enter drop out after a very few years. Most of those who succeed in school still become drop out at a higher level. UNESCO data show that only in a small minority of nations do even half the children complete the first six grades.

No child, however, fails to learn from school. Those who never get in learn that the good things of life are not for them. Those who drop out early learn that they do not deserve the good things of life. The later dropouts learn that the system can be beaten, but not by them. All of them learn that school is the path to secular salvation and resolve that their children shall climb higher on the ladder than they did.

For most members of the present generation, this hope, that their children will benefit more from school than they, is doomed to disappointment. Schools are also expensive for this hope to be realized. For many, it may appear to be realized but the appearance will be a delusion, fostered by inflationary debasement of the academic currency. More colleges and high school degrees will be granted but they will mean less both in terms of amount and kind of learning and in terms of job qualification and real income.

In all countries, school costs are rising faster than enrolments and national income. No country in the world can afford the education its people want in the form of schools, except a few rich nations.

Population is growing so much faster than the rate at which real educational opportunities can be expanded by means of schools. On the other hand, people will not voluntarily curtail birth rates until they have a minimum not only of education but also of the social mobility which implies. While children who never go to school are most deprived economically and politically, they probably suffer the least pain. Many communities in Asia, Africa, Latin America, have no schools or have them only for the children of the elite. The parents and grandparents of those communities have never known schools as places they expected

their children to attend. For them, going to school means leaving the traditional life, moving to a different place, laying aside physical burdens for the work of the tongue and the mind, exchanging traditional food, clothing and customs for those of the large town or distant city. Parents often prefer to keep the child in the traditional community, bearing the familial burdens, confined to the enjoyments which primitive means can provide. They know, however, that this implies continuing domination by the others, continuing dependence in time of hunger, war and sickness increasing distance from those who enjoy wealth, power and respect.

When the choice becomes real, most unschooled parents all over the world decide to send their children to school.

Once at school, most of those children dropped out before they learned to read. They did learn, however, how unsuited they were to school, how poor their clothing was, how bad their manners, how stupid they were in comparison with those who went on to higher grades. A little schooling can induce a lot of dissatisfaction."

Schools are for most people what Everett Reimer calls "institutional props for privilege". The most urgent priority, he argues, is for a consideration of alternatives in education, alternatives content, organization and finance. Above all, we urgently need alternative views of education itself, its nature and possible functions in the society of the future.

Dr. Ivan D. Illich, in his bold and provocative book entitled "Deschooling Society" calls for a cultural revolution urging us to a radical examination of the social myths and institutions by which our lives are increasingly organized in an industrialized, mechanistic and progressively less human world. Illich presents a startling view of schooling; schooling (as opposed to education) has become our modern dogma, a sacred cow which all must worship, serve and submit to, yet little true nourishment is derived. Schools have failed our individual needs, supporting fallacious notions of progress and development that follow from the belief that ever increasing production, consumption and profit are proper yard sticks for measuring the quality of human life.

Illich's suggestions for reform are radical and exciting to speculate about - and he feels that the measures he suggests in the book are necessary to turn civilization from its headlong rush toward the violence which frustrated expectations will certainly unleash, so long as the

school myth is allowed to persist.

Philip H. Coombs, in his book "The World Educational Crisis - A systems Analysis" stated that "the nature of this crisis is suggested by the words change, adaptation and disparity". Since 1945, all countries have undergone fantastically swift environmental change, brought about by a number of concurrent world wide revolution in science and technology, in economic and political affairs, in demographic and social structures. Education systems have also grown and changed more rapidly than ever before. But they have adapted all too slowly to the faster pace of events on the move all around them. The consequent disparity - taking many forms - between educational systems and their environments is the essence of the world-wide crisic in education.

There are assorted specific causes of this disparity but four in particular stand out. First is the sharp increase in popular aspirations for education, which had laid siege to existing schools and universities. Second is the acute sarcity of resources, which has constrained educational systems from responding more fully to new demands. Third is the inherent inertia of educational systems, which has caused them to respond too sluggishly in adapting their internal affairs to new external necessities, even when resources have been the main obstacle to adaptation. Fourth is the inertia of societies themselves - the heavy weight of traditional attitudes, religious customs, prestiges, and incentive patterns and institutional structures - which has blocked them from making the optimum use of education and of educated manpower to foster national development.

If the crisis is to be overcome there must obviously be substantial mutual adjustment and adaptation by both Education and Society. If these are not forth coming, the growing disparity between education and society will inevitably crack the frame of educational systems, and in some cases, the frame of their respective societies. This is inevitable because as the educational needs of national development continues to grow and change and as pressures on the demand side of the educational systems continue to build, it will not be possible to meet the situation by increasing at will the resources made available to the systems.

To do their part in meeting the crisis, educational systems will need help from every sector of domestic life and in many cases, much more money. But money will be harder to get since education's share of national incomes and budgets has already reached a point that restricts

the possibilities for adding on further increments. They will need the real resources that money buys. They will especially need a fuller share of the nation's best manpower, not merely to carry on the present work of education, but to raise its quality, efficiency and productivity. They will need building equipment and more and better learning materials. In many places, they will need food for hungry pupils, so that they will be in a condition to learn.

Above all, they will need what money alone cannot buy - ideas and courage, determination and a new will for self-appraisal reinforced by a will for adventure and change.

EXPERIENCES IN COMMUNITY SCHOOL IN KHMER REPUBLIC

Since 1955, UNESCO had also brought the concept of Community School to Khmer Republic. Here were the main points of the projects made by Mr. J.J.A. Frans. UNESCO's expert at that time.

WHAT A KHMER RURAL COMMUNITY SCHOOL MUST BE

AIMS :

1. The Community School aims at improving not only the pupil's life when he becomes adult but also the life of all human beings in the rural community to which he belongs. The school must serve the life of the children, of the teenagers and of all adults of the communities.

2. The community school makes best citizens, best villagers with physical, intellectual and moral qualities, e.g. they can understand well those who are different from them and those who don't think like them. They are competent for what they do - they are parents who understand well their children, and the role of the school; they are citizens who know and understand the other groups, races, religions and nations.

3. The community school must directly, practically and actively participate in the rising of the level of rural life, namely the material, intellectual and cultural aspects. It works for the diminution of disease, for a more hygienic life, for the improvement of agricultural techniques, and local handicraft, for the diminution of prejudicial superstition, of the avoidable accidents, for the lack of understanding and conflicts between individual, families, groups, races and nations.

4. The community school can offer a realistic teaching, e.g. really useful for the immediate improvement of life and work conditions of the Khmer community unless it is not confined within the 4 walls.

5. Books, pamplets, handbooks and other teaching aids are certainly important but not sufficient.

6. The community school should bring the young pupils who are going to leave it to know, understand the notions and to acquire the aptitudes which are essential for the immediate improvement of human life in the community where the pupil lives, and in the community where he is going to live.

7. At the community school, the pupils must indeed learn to solve the problems of real life of the Khmer rural community.

8. The community school must open the door on the rural community life by visits, fieldstudy, inquiry, work experiences, and useful activities programme.

9. Fields, forests, water streams, mountains, workshops, factories, museum, sessions, and meetings should become with the books and didactic board, the true teaching material and true fields of study of the community school.

10. In the rural community school, the Khmer rural youth must as freely and rightly as possible be able to study, to work, to play without compulsion. A school garden, some pets, a model kitchen, etc. will be among the out of school activities in the near future.

11. For the Khmer rural community school must become little by little a meeting centre for the adults, where the villagers come and listen to a talk share in the discussion, ask questions to the visitors, prepare an activity or a group work for the community; where the parents come and discuss their problems and difficulties with the teachers - where the youngsters come and play a match party or organize a festival or dances - where the farmers r come and discuss the new mthods of farming or the advantages and inconveniences of new prefected tools (plough, harrow, etc...); where the craftmen come and compare the value of their masterpiece or their handicraft techniques or come and demonstrate their skill about a new handicraft process or about a perfected tool.

ADAPTATION AND INTERPRETATION OF ACTUAL SCHOOL PROGRAM IN THE SENSE OF THE PARTICIPATION OF RURAL SCHOOL TO THE LIFE OF THE KHMER RURAL COMMUNITY

12. An English poet said that the true study of humanity is the study of human life. So the community school rejects little by little progressively, but resolutely, the traditional cutting out of the program of 3/4, 1/2 or 1/4 of an hour of isolated lessons.

13. The community school gathers its subjects of lesson around the study and interest center which belong to the real life in the present, to the future of the rural community and not in following those invented by a handbooks' editor financially interested to the utilization of his handbooks.

14. The community school concentrates its subjects of study around the great and true domains of activities and problems of practical life of

rural community members, as well as those activities and problems in the present, in the past, and in the future.

15. The community school makes great effort to consider as study center the fundamental needs of men and their communities, their evolution, their problems that involve their satisfaction, the possibilities and means to reach them.

16. It makes a great effort to insert into the programme, not only the indispenable notions for the success in the different examinations, but also the study of domain of activities and the problems of real human life in the rural community here and there, in the present, in the past. and in the future.

17. The community school seeks to use the natural sphere in which it is, and where the pupils live, the school and the surrounding school, the commercial and idea exchange between diverse communities, the material and intellectual differences and adaptation between individual and groups, the need to assure convenient life, to protect against disease, the natural forces, the intemperies, the heat, the cold, the water, the fire, the human forces, the need to improve his existence, etc... To teach in the occasion of these subjects study in school, out of school, all the indispensable notions.

18. In the community school, the study of pupils becomes experimental, realistic, vital and full of learning and meaning for the child himself.

HOW TO MAKE RURAL SCHOOL TO BECOME AN ORGANIZATION BELONGING TO THE ENTIRE RURAL COMMUNITY

19. The community school seeks to bring the parents, the mothers, the farmers, the craftmen, the youth in one word, all the village community members to be interested and take part in the school and the out of school activities.

20. It seeks finally to bring the people outside of the edcuation to help and cooperate with the educator in the school activities and to bring the pupils to improve the community, to contribute to the school development as well as to the life and work conditions of pupils and teachers.

MAKE A RURAL SCHOOL TO BECOME AN ENTERPRISE WORKING CONSTANTLY FOR THE IMPROVEMENT OF KHMER RURAL COMMUNITY

21. The community school works for the cooperation, coordination, of the efforts of all social and professional groups in the Khmer rural community which try to improve it.

It must try to stimulate all the members and all the groups to share its activities. In turn, it also interests them according to its possibility so that the activities of those groups involve all of them for the well - being of the Khmer rural community.

22. It examines and finally seeks with the pupil's help to transform the school to become a living laboratory where the pupil studies and constanlty experiments the aim and the methods of democracy and where he acquires knowledge and aptitudes which enable him to assume spontaneously and voluntarily with faith and enthusiasm according to democratic progress his part of work and responsibility in the local, national, international community affairs to which the youth belongs.

FUNDEMENTAL PRINCIPLE

The social function of school is not and cannot be to prepare the pupil so that after school he can assure selfishly by all manner of means within reach the best and possible life for his own profit and for that of his family in the prejudice of the third and of the community where he lives.

The school function is and ought rather to prepare the pupil so that he can assure a best life in observing strict honesty and moral rule in regard to himself and to the third as well as to all local, national and international community members. He gets towards them imminent debts of social and human solidarity.

This fundamental principle involves the following programme:

1. Study the contribution that the present school can provide, activities leisure and recreations, for the present Khmer rural community.

2. Take in each province one or several schools located in villages of middle size far enough from the town or from the highway as pilot schools.

3. Elaborate with the staff and if possible with the school pupils an

action programme to be realized by the school and pupils in order to improve and embellish the communities around the school.

4. Study how the pupils can make the life of the Khmer rural community, more easy, more attractive, and more productive by avoiding some acts, by achieving some tasks and by regularly sharing some work (familial garden, etc...)

5. Study what the present rural school can contribute for the improvement of Khmer Community by the creation of school garden, by the organization of periodic day of village cleaning, by the organization of small entertainment, by establishing friendly, frequent and regular relation with parents by the organization of games, etc...

6. Study how to make use of rural community as a field of study for the present rural school.

7. Study how to make use of rural community as a field of practice where the school or pupil can provide services to the communities or villages.

8. Elaborate a plan of study and work and adapt the interpretation of present programme in order to take the present community as a field of study.

9. Elaborate a service programme to be given by the school and individually by the pupils to the community.

10. Study the possibility to elaborate a programme of domestic work.

11. See how one can put emphasis on the interpretation of the present school programme on the orientation towards agriculture.

12. See how one can develop the study of some practical notion of commerce.

13. Elaborate an improvement plan of the achievement of the present rural school.

14. Elaborate also practical improvement plan about the setting and the material of the present rural school.

15. Improve the teaching methods of the present rural school.

16. Elaborate a school programme with respect to the needs of the pupil as well as to those of the present rural community.

17. Elaborate with the pupil an extra currucula programme, for example game, song, music, theatre, useful handwork, meeting, dance, small journal publication.

18. Study how the extra curricula programme can contribute to educate the community members

- by offering them the occasion to share the responsibilities
- by participating in the community affairs
- by encouraging contacts with chiefs, natural leaders and the groups...

19. Elaborate an educative programme health that the present rural school can realize in the community to reduce contagious disease, to promote a healthy life for the villagers to encourage them to observe practical rural hygiene.

20. Study how one can render more practical, more progressive, and more demonstrative the present programme of agriculture.

21. Elaborate a more practical programme of the carefulness rules in the street.

22. Study how to bring the pupil to study the whole aspect of the village, for example

Our village:

- the landscape around the village
- the animals
- the trees
- the water
- the relief
- the inhabitants and their groups.
- the craftsmen
- the commerce and the shops
- means of communication, roads and lanes
- markets
- tradition, superstition, moral and customs
- the pupil establishes a plan of his house, village, community, district, provinces, country, neighboring countries.

This concept launched by J.J.A. Frans, UNESCO's expert had gained the opinions of the eminent national educationalists.

The idea was then put into practice with more or less adequate preparation of the staff.

As a result, we realised to introduce:

- workshop, agriculture, animal raising, home economics into 39 schools;
- workshop, agriculture, home economics into 96 schools;
- workshop, agriculture, into 175 schools;
- workshop into 193 schools;
- medical box into 102 schools;
- infirmary into 71 schools.

Besides, we had 14 model schools, and 126 experimental schools.

Apart from the study and the practical activities within the schools, the teachers and pupils undertook the outside activities in the communities such as individual projects in domestic activity, participating in the village road, in the harvest and rice planting of the community members.

One cannot forget the activities of the community members towards schools. The community members around each school are associated in committee, in cooperation with school's teachers and religious chief-monk to develop the school's facilities and to help their functioning.

In evaluating the results, it is found that the concept was launched without enough preparation from the top-official to the school teachers. They did not clearly understand the nature and scope of community school, and had no faith in it. Of course, there had been so useful change even though. The school teachers organized stereotyped practical activities and out-of-school activities in order to please their supervisors. There is still disparity between school and society. The schools continue to produce maladjusted pupils to the real community. Most of the parents who seem to understand the necessity of education, by providing funds for buildings, equipments and other facilities, send their children to school with the hope that they will get white-collar jobs after leaving school. Moreover those who drop out use very little of their knowledge gained from school in their daily life. They prefer adopting traditional ways and manners of their ancestors without seeking any further improvement.

COMMUNITY SCHOOL AS AN APPROACH TO EFFECTIVE AND ECONOMIC DELIVERY OF MASS PRIMARY EDUCATION

Nowadays, all countries in the world and their political leaders to begin with powerful countries, are talking about peace, economic development, production, productivity, social justice, social welfare, international, and regional cooperation for the purpose of betterment. The developing countries whether they are willing or not are requested to join the effort and to go along. All of these imply the changing of peoples thinking, attitudes and behaviors which is the main task of the government, more specially the ministry of education.

Despite the arguments against schools and its irrelevancies, the schools remain always available institutions for education especially in the developing countries.

In Khmer Republic, the budget allocated for education already reached the point. Among 100 pupils enrolled in primary school, only 0.3% can go up to the higher education (UNESCO date in 1963). So it is openly proved that the governments' efforts serve the people minority. On the other hand, the great majority of pupils who drop out rarely use their knowledge acquired from the school in their daily life. Generally, they adopt traditional ways of their parents.

There are indeed gaps between the actual education system inherited from the colonial ruler and the daily community life.

There are some noticeable deficiencies:

1. The teaching techniques are out of date
2. The content of curriculum sometimes hasn't any connection with the real life.
3. The instructions provided to pupils seem to be good enough but the people's intellectual level is too low to accept them. The pupils who got them had no opportunity to use them because of this social environment.
4. The teachers themselves misunderstand the meaning of education in its broad sense.

   They have fixed ideas that education should mainly be based on the amount of instructions given in the formal classroom.

5. The school takes care only of the pupils, pays less attention to the life of community members and by the way pulls the pupils out of their social environment.

6. The practical activities program introduced in school is limited to please the high official.

Everybody knows that in this changing world, the manpower is the first important thing. Illiterate or uneducated people are unable to accept progress and innovation. In order to promote development and to be able to have existence, the developing countries must educate their people.

We are aware that they have already made emphasis on education, however this emphasis is not yet fully exploited. They have a great number of staff. The question now is how to use these human resources. In general, primary education has its schools and teachers in all parts of every country. How to change the character of the primary school and to turn the school teachers into a sort of change agents for the surrounding communities is therefore one of the problems of the Ministries of Education in half the world. Hence the great interest everywhere in curriculum reform, renewal, the vigorous and often internationally supported programmes aiming to improve the teaching of particular subjects notably mathematics and physical science. These efforts are important and their success is not to be decried, but their effect on the fundamental problem is and is likely to remain marginal.

Basically, our need is to find a fresh answer to the question "What kind of education will produce citizens with the knowledge, skills and above all the attitudes on which their happiness and their country's future prosperity wil so greatly depend? Traditional education has not certainly provided the answer. Rather it has produced a generation of young people estranged from the adults in their communities including very often their own parents. We believe that the answer which is based on sound educational principles is also the answer which will come nearest to meeting the needs of national development, and will also reduce, if it can not eliminate, much of the frustration and social disintegration which our effort over the past years have produced. The principles are simple enough and in theory universally accepted; they are even put into practice in some of the countries which think of themselves as developed. They are, briefly, that in the process of learning a child should so far as is possible progress from the known

to the unknown, that his growing skills, mental and physical, are most effectively encouraged when he can see their potential and their immediate application and that his capacity for rational thought is best stimulated by getting him to exercise his young mind on subjects which have reality for him; in other words, that a child is best educated in and in the context of the community to which he belongs. If this makes educational sense, it also makes sense in the light of the development programmes to which such a high proportion of national resources are currently devoted. Many countries are, at any rate in theory, committed to comprehensive schemes for rural and urban betterment in which all the government agencies concerned, agriculture, health, cooperatives, labour, community development, education are meant to be working together as one. Admittedly practice is still lagging far behind precept, but the gap is closing and it would be tragic if education failed to play its part in the team effort by continuing to teach the irrelevant and so making young people unfit to contribute as they could to national and local prosperity.

But there is more to a "Community School" then a set of subject syllabuses which take account of local conditions. For if schools have an up-to-date programme and the school teacher uses the best techniques to educate the pupils, the last who pass a great deal of time with their parents in the community cannot apply their school knowledge when their parents environment are too backwardand unable to accept them. It is sometimes true that school can have its influences on the community members through pupils. But to be sure that what they teach is efficient, school teachers should gain confidence of the community members and have some special techniques that school cannot provide. It is necessary to have close contact with the communities. In fact, schools should build a kind of bridge and create an atmosphere of reciprocity between itself and communities. A "Community School" is in the fullest possible sense, the school of the community not just the school which stands in the community. It is a school in which children are taught and well taught, during what are, normally regarded as "School hours" and also the institution which offers to adolescents and adults the education, training and even recreation for which they are asking or for which they can so easily be stimulated to ask.

A "Community School" attended by, supported by, and above all understood by the entire community, junvenile and adult alike, and affording the

opportunity of a better life in a setting which is natural for all, offers at least one means of bringing about education revolution which is imperatively needed unless we are content to watch the gap between the developed and the developing countries grow wider rather than narrower, to ignore the growing gap between generations in the developing countries and to regard as a mirage the development in the fullest sense of the term to which we fondly believe, education could be bad. The developing countries are not defeated yet, but they soon will be, unless something can be done pretty quickly to harness education to its urgent task. The community school offers one line of attach.

One should also notice that in the developing countries, the communities have domestic problems in the field of health, hygiene, agriculture and others which need no specialized agencies to solve them, but only the unselfish service of the school teachers in place can largely help the communities' members to overcome them.

Within this frame of reference, the community school should be considered in three aspects:

1. as an educational institution, to be judged on purely educational criteria;
2. as an instrument of "development", local and national;
3. as a centre for the education and training of those members of the community who are outside the normal school age.

The first consideration involves recognition of the fact that there are two quite distinct communities to which the school has a relationship, the local community which it directly serves and the national community represented by a wide-spread often complex administration. Basically, both will gain if our major premise is true that schooling based in large measure on what can be seen as relevant and meaningful is essentially better and more productive than schooling which deals with what is strange and implicable. This does not mean that a child brought up in a bush school should not be introduced to subjects and ideas drawn from the wider sources than the purely local environment or that a city child should not acquire knowledge of ways of life different from those which he sees around him everyday. This would lead to two distinct and separate groups of citizens. It does mean that if understanding is to replace much of the rote learning which is admitted to be one of the

curses of what passes for education for millions of children today, the first steps towards literacy and numeracy should be taken in a familiar context, and that what is unfamiliar should be introduced when children are ready for it.

However, objections will be raised by both national and local communities to the idea that schooling should begin with the known and familiar and may not for many children, proceed very far beyond it. Nationally it will be argued that a child in the remote community will be inevitably barred from developing his full potential unless from as early an age as possible, he is subjected to the same educational treatment as a similar youngster in the developed community. This argument is rejected as out-of-hand because good education is in any circumstances and for any child better than bad education; education suitable for the developed area is often totally unsuitable for the remote area. Education for the remote area based on developed area needs will probably be bad education.

One can also argue that at any rate up to the age of thirteen or fourteen, the mental attitude of a child, his ability to think logically and the retention and development of his natural curiosity are more important than his acquistion of a limited store of facts often ill-assimilated. Community school can offer the habit of constant observation and the capacity for honest deduction from carefully observed data. But it required however .special arrangements to ensure that in any process of selection for admission to higher level of education, pupils from it will not be penalised because their upbringing has been unorthodox. It may even prove desirable to exempt them from the kind of centralised nation-wide type of examination.

A second consequence of almost equal importance is that since communities vary greatly, so will curriculum of community schools have to vary. It will be essential for the provincial or district representative of the central Ministry and for the local inspector or supervisor of schools to have a clear and sympathetic understanding of the concept and purpose of any community schools for which they are responsible and to see to it that no such school is hamstrung by rigid enforcement of rules and regulations which may prove to be unsuited to it. The sort of issues on which firm lo al agreement will have to be reached may be pretty comprehensive, ranging from subject content and teaching method t hours of attendance to suit local conditions and dates of school holidays to accord with seasonal and occupational variations.

The last objection to community school which is almost certain to be voiced, initially at any rate, by parents. The understanding of the parents is particularly important because of the effect which the school will have through the children on their parents, their homes and their whole community.

We are constantly told that education is one of the most effective instruments for furthering change, change in the habits and practices, the attitudes and beliefs of communities large and small. But this change should be carefully studied and planned.

In order to fulfil the change, the school principal, however, and as many of his staff as possible, should know what the needs for training in agriculture, health, building, book-keeping .... are, know and be prepared to cooperate closely with the other agencies through which the needs can be met, and in many cases invite those agencies to use the school as the base for their activities. At the same time, the school has to involve the community members, the parents in the support of a school, by making them participants with the children, in the education and training which the school seeks to provide and to get them to realize through personal experience that the school can be the source or at any rate the channel for new knowledge, ideas and skills which can lead to obvious and speedy improvement in the quality of life enjoyed by all who come within the school's sphere of influence.

In practice, a community school must have a curriculum which contains a common body for general education and the programme of regional activities. This curriculum should be achieved with appropriate methodology. It implies to the school teachers the recognition of the community's interest in the educational objectives and techniques of the school, the participation of the community in activities, the full collaboration of community and school in community activities.

So the school teachers not only have to teach their pupils with an up-to-date method, but also have to make the school and its activities good examples for the community members. Some practical activities such as home economics, agriculture, health, cooperatives,....etc..... should aim at educating pupils and be opened to the community's members who ask for it. In the same way the community's members who have some special techniques in certain fields are invited to contribute to the school's programme for the benefit of the pupils and teachers.

In the Khmer Republic, the success of this new approach of community schools remains on the following conditions:

1. the comprehension and the faith of the high-ranked officials about the community school as a solution to the educational problem.
2. the selection of a number of schools as pilot projects and to train supervisors, and the school teachers responsible for the pilot community schools.
3. the careful setting up of the curriculum of community schools.
4. the comprehension and the support of the idea to all the teaching members at every level.
5. the comprehension and the collaboration of the other government agencies.
6. the need of the service of community school expert.

Discussion Summary of Mr. Nhoeng Nhan's Paper

Participant: Regarding the use of equipment, would the experimental school allow the people in the community to use them? Efforts must be exerted to make the school attractive enough to induce the parents to come and learn with their children. This means that lessons need to be planned to reach both the children and their parents. Certain lessons need to be taken up out of school.

Speaker: Efforts in educational reforms in my country since the end of World War II have not been successful. This is due to the fact that the schools are not responsive to the needs of the community. As a result of this gap between the school and the community, village boys and girls who have had a good education elsewhere feel themselves superior to their fellow villagers and do not want to return to their original homes. Community schools therefore constitute serious attempts to decentralize schooling by placing the schools in the local milieu. They also form an integral part of the process of democratization of education.

Participant: How can we persuade teachers to work more than they used to do the job?

Speaker: Many teachers are not willing to work harder. But it takes a long time to persuade them to try to achieve the educational aims.

Participant: Financial incentives are difficult to provide in most of the less-developed countries. To reduce the teachers' actual time spent in community work, a curriculum which integrates classroom and community development needs to be developed.

Participant: Do model schools and experimental schools use different curricula?

Speaker: The 14 model schools employ new methodologies, and new instructional materials. Teachers for the model schools have also been trained specifically for the purpose. It could not, however, be expected that 14

model schools out of the total number of 3000 schools could create an impact upon the educational development of the country. The old system still prevails.

As for the 146 experimental schools operated with the assistance of UNICEF, the emphasis has been placed on practical activities in such fields as agriculture and home-economics. Special workshops have been built, and likewise teachers have been trained for this new type of schools. A close relationship between the school and the community is encouraged: in the practical work, students make use of materials drawn from the respective localities, and the community contributes towards the operation of the school. However, progress has been hampered by the war condtions prevailing in the country.

Participant: Is there any evaluation conducted on the community school? If so, what kind of procedure is used and what sort of interesting findings can we learn and share?

Speaker: Since only a few model and experimental schools were recently set up, we must regard this endeavour as a drop in the ocean. No systematic evaluation has been made yet. Nevertheless, from close observation, it can be reported here that most teachers seem to have little confidence in community schools. We are trying our best to convince and encourage them to work harder. Thus, we hope we can eliminate such unfortunate attitudes and lethargy.

We should try to apply the systems approach in experimenting and diffusing community school practices. Adult education can be developed hand in hand with the formal education system. The alternatives which could be applied in the Khmer situation may be the use of self programmed texts which could help reduce cost and these could also be reinforced by radio broadcasting programmes.

Participant: Is there any difference in the educational standard between the model and experimental schools?

Speaker: Presently, there is not much difference. But we have been trying to improve curricula used in these two types

of school. In future, after development and improvement of teaching — learning situations, there may be some evidence showing the differences in their achievement and thus the educational standard.

TRANSLATION
Original: French

REFORMS IN PRIMARY EDUCATION IN LAOS

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(Presented by Mr. Sounthong Khamsing Savath)


Mr. Sounthong Khamsing Savath

INTRODUCTION

Because of its geographical location and the difficulties which have resulted from 20 years of armed conflict, Laos should be considered among the least advanced of developing countries in spite of its rich natural resources. Important conditions include:

1. a young population with a high growth rate and an uneven geographical distribution,
2. a citizenry living in a traditional framework of an agricultural economy which is village-oriented and independent,
3. an insufficient network of roads which is further aggravated by the communication difficulties resulting from conditions of insecurity in certain areas,
4. a low level of per capita income which is coupled with an unequal distribution of wealth between rural and urban areas,
5. malnutrition characterized by insufficient proteins and calories, particularly among pre-school age children - a condition which affects student achievement,
6. endemic diseases such as malaria and infectious diseases which, coupled with nutritioanl deficiencies, create a particularly high rate of mortality and have some effect on school absenteeism.

We should add to the above six problems the additional problems of finance such as monetary inflation and budgetary deficits. These conditions explain our difficulties, but the significant progress which has been made in school enrolment, particularly at the elementary level, demonstrate the considerable effort which has been made.

It should be noted, however, that Laos is a country imbued with Buddhism which is not only a religion, it is also a civilization - a way of life. At one time the pagoda was the center for education as much as it was a center for religious activities. Although the pagoda has gradually lost its importance as an educational center since the creation of public schools, the traditional education that was offered by the pagodas has contributed to maintaining a respect for education in rural communities.

In parallel with the tradition of Buddhist education, the French protectorate created in 1907 the first Franco-Lao schools in which instruction was in the French language. They represented a type of French primary education reserved for the elite. On the eve of Laos' independence in 1945, therefore, there were only 11,000 children in school, representing less than two per cent of the school age population.

THE OBJECTIVES AND APPLICATION OF THE 1962 REFORM

Objectives

As in all traditional societies, education in the past - both religious and secular - had as its objective the transmission of both material and cultural traditions in order that individuals be better integrated in the village community.

But our modern society has changed so that the question is now one of integration within the socio-economic context of a society which is constantly changing. Therefore, we must no longer try to adapt the individual to his group, but we must make it possible for him to re-adjust himself continuously to the rapid changes in society, and to the rapid growth of knowledge. This purpose is precisely the spirit of the 1962 reform of education. The reform gives priority to the acquisition of habits before that of knowledge and priority to practice over theory without neglecting the need to return continouously to basic knowledge. Thus, we can integrate tradition and progress in enriching, ipsofacto, the individual with adequate values and experiences.

In retrospect, however, whatever short-comings and limitations it might have had, the traditional education given in the pagodas did provide learning sufficient to the needs of a static society limited to the village community. And it also contained a few universal principles of wisdom.

The pagoda education was replaced in the colonial period by an education which also had as its objective the formation of "good citizens," as conceived by the colonial power. "Good citizenship" included the seeking from civil servants of lower echelons the permission to be put to the service of the colonial administration. The purpose was to provide a minimum-sized cadre for the execution of orders so that the administrative mechanism could function. However, an upgrading in the quantity and quality of training was never of major concern to the authorities.

That heritage has put its imprint on our system of education in its orientation as well structure, and we had to wait until 1962 to reorient the basic principle of our educational system, taking into account its inadequacy in relation to the new situation of an independent country and the aspirations of the population with regard to education.

The growing aspirations of the population in regard to education and the lack of adaptability of the old educational system to our current situation are the two fundamental considerations from which reform has evolved.

In place of the traditional educational system inherited from the past, which was more academic than practical, we have tried to substitute a modern education which is more adjusted to the economic and social conditions of the country. In response to the country's need, the nationalisation of education was designed to go much further than a simple statute or institutional change; it was aimed at a profound transformation of the curriculum, of objectives and of methods. These changes implied the need for a Laosization of both instruction and instructors.

If the development of the country is essentially a matter of education, it follows that education ought to understand that it must be at the service of the country's development. It is for that reason that the 1962 reform stated its first principle, thus:

A) Education should be geared to socio-economic development, i.e., it must be adapted to the foreseeable needs of the economy. To this end, it will be necessary to implement:

   A radical reform of the curriculum which, for each and every discipline to be taught, must take into account the elements of the local environment in which the child lives, and be oriented to the

acquisition of habits and skills necessary for the immediate improvement of the both standard of living and production. These changes were to be done with eventual collaboration of the Ministries in charge of economic and social affairs and would focus on the definition of objectives and the preparation of the curriculum.

To this end we must progress from the practical to the theoretical by introducing manual labour and, in all possible cases, the kinds of work that pays off. The new curriculum will emphasize the necessity for building all instructions around observations and improvement of the environment. It envisages the creation of student gardens and student co-operatives, conceived as an integral part of instruction rather than as added activities, or extra-curricular activities. The three R's and the like will be considered as means of development and not as ends in themselves.

The new curriculum will lay more stress on the acquisition of habits than on that of skills and on the formation of attitudes, essential to development. Attitudes will include observational skills, the notion of output and efficiency, co-operation and team work, education for work habits, order and exactitude, and so on. These changes are to be made without neglecting the human and social equilibrium and, by so doing, revitalize the popular culture and expand Buddhist instruction and law. Stress will be placed on youth movements within the schools in order to develop the spirit of initiative and responsibility of children. At the same time, with the help of various associations, we expect to make parents share the responsibility of training their children.

B) The second principle is concerned with the integration of education by making use of the methodology of centers of interest, by providing continuity in the acquisition of knowledge and continuity between the different levels of education. This process will serve the purpose of making it possible for the most gifted children, whatever their social origin, to have access to responsible positions where their skills may be best utilized. It is in this context of life long education that the integration of adult education has also been envisaged.

C) Finally, the 3rd principle is concerned with the mobilization of all the educational resources of the nation. The school is only one of

the instruments of education. To institute this mobilization, a special commission has been created to insure development of education in conjunction with social and economic development. The commission will bring together representatives of the various ministries and departments which may have educational functions. It will also include representatives of radio, press, sports associations, women's associations, and the associations for the popularization of agriculture, of health, etc. All these agencies must be put to the service of education.

Application and difficulties

The initial objective was to insure a minimum education for the entire population, calling for the enrolment of all children from 6-12 years old. It also called for the education of all those adolescents and adults, who have not had the opportunity to go to school, or who have dropped out along the way. This objective amounted to multiplying the number of schools and providing a corresponding number of instructors. This objective was not possible to realize because of our modest means and our inadequate means for training teachers. Thus, we have chosen a more realistic approach and have embarked upon a process of progressive and rational enrolment which has permitted us to reach the quantitative objectives which were set up as a long-term projection with the assistance of the Unesco consultative mission for planification and education in Asia. We now have nearly 240,000 pupils in primary education in 1971-1972 and the projection set up for 1976 is for an enrolment of 260,000 pupils. The Laosization scheme has already been achieved at the primary level and all personnel, instructors and administrators are Lao, and all instruction is in Lao. The French language is being taught only as a foreign language beginning at the 4th grade of primary school. Inspite of those eloquent figures, we are still far from being able to meet our real needs. To do well we will have to double the enrolment, taking into account the rate of population growth; but our classes are already overcrowded and each teacher must, in certain classes, take care of more than 50 students.

The State had projected in 1962 the creation of 1,500 rural centres for community education in three years time. However, the insecure situation in certain rural areas, the difficulties of communication, and the limitations of national resources have only permitted the creation of 900 centres to date.

Qualitatively, the implementation of the reform has met with great difficulties. One stumbling block has been the inertia which tends to perpetuate the subject matters which everyone has recognised as useless and the methods which have been considered inadequate. Another difficulty we have encountered is the spirit of "easy does it" which tends to perpetuate the following of familiar paths, however wrong, rather than clearing the bushes in the right direction. There are other difficulties, too, such as idolatry, or the worship of traditional examinations, the cult of diplomas, the prejudices against manual labour, and so on. Since they were used to the previous regime which has formed the intellectual elite, our teachers have questioned the efficiency of the new system, and they have tried to hold on to the traditional form of education. Such a reaction is probably the result either of mis-understanding or of an ignorance of the reform itself. On the other hand, the reform has brought about certain changes in teaching techniques which require changes in the curriculum and teaching methods. These changes, in turn, necessitate the re-training of teachers, a task which requires the time, materials and means which we do not have in sufficient quantity. Moreover, it has not been easy to make the parents understand that education is not solely to prepare people for civil service, but that the products of education can be utilized in a labour market which offers a great many other opportunities.

If the parents do participate in the life of the school, thanks to the numerous associations which have been created, youth movements on the other hand are almost non-existent. Furthermore, it has been very difficult to insure co-ordination between the various types of education. The resources which we have put into the development of elementary education has reduced our ability to insure continuation through secondary school. This state of affairs has resulted in a bottleneck between the primary and secondary levels, both quantitatively and qualitatively, because the 90% of students who finished the primary level and cannot go on for secondary studies, are without qualification to be absorbed in the productive sector.

New Orientation

Since our primary preoccupation is the qualitative improvement of the educational system and its adaptation to national needs a series of steps have been taken recently:

- to reduce education wastage which has resulted primarily from the lack of qualifications on the part of the instructors, a programme of teachers upgrading has been conducted;

- the programmes of studies, or curricula, have been modified and we have undertaken the organisation of seminars which bring together people who are mainly responsible for primary education at the central as well as the provincial and local levels. The purpose is to define the objectives of each discipline and to work out the curricula accordingly.

- Recently special attention has been directed to the teaching role of the people responsible for educational administration, particularly at the local level, to the effect that a corps of education inspectors has been established, with the purpose of separating the administrative role from the teaching role, these two roles previously were assumed by the same person.

REFORME SUR L'EDUCATION DU LAOS RELATIVE A L'ENSEIGNEMENT PRIMAIRE

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INTRODUCTION

Du fait de sa position géographique particulière et des difficultés conséquentes à la lutte armée engagée depuis vingt ans, le Laos figure, en depit de ses richesses naturelles, parmi les moins avances des pays et voie de développement: une population jeune avec un taux élevé d'accroissement démographique et une répartition territoriale inégale, vivant dans le cadre traditionnel d'une économie agricole villageoise autareique; une faible densité du réseau routier avec une aggravation des difficultés de communication du fait des conditions d'insécurité de certaines zones; un bas niveau du revenu moyen par habitant avec une distribution mal répartie entre villes et campagnes; une mal-nutrition avec insuffisance en protéines et calories surtout chez les enfants d'age préscolaire, ce qui ne manque pas d'influer sur le rendement scolaire, une fréquence des maladies endémiques telles que le paludisme et des maladies infectieuses qui, associées à des troubles nutritionnels, sont a l'origine d'un taux de mortalité infantile particulièrement élevé et ont des effets sur l'absentéisme scolaire. Si l'on y ajoute les problèmes financiers tels que l'accroissement de la masse monetaire et le déficit budgetaire, voilà autant de facteurs limitants que expliquent nos difficultés et montrent en même temps les efforts considérables qui, malgré ces conditions difficiles, ont abouti à des progrès très sensibles de la scolarisation, plus particulièrement dans l'enseignement élémentaire.

Par ailleurs il faut se rappeler que, si le Laos est un pays imprégné de bouddhisme, celui-ci n'y est pas seulement une réligion mais une civilisation, un style de vie et que, de tous temps, la pagoda fut un centre d'éducation autant que de culte; bien qu'elle ait peu à peu perdu de son importance du fait de l'implantation d'écoles publiques dans chaque village, cet enseignement populaire traditionnel a beaucoup contribué à maintenir un certain niveau d'éducation dans les communautes rurales.

Parallelèment à cet enseignement, des 1907, le service d'enseignement du protectorat francais crée les premières écoles franco-lao qui donnaient, en francais, un enseignement du type de l'enseignement primaire francais mais il était réservé à une élite si bien qu'à la veille de l'independance (en 1945), il n'y avait que 11.00 élèves et le taux de scolarisation ne depassait pas 2%.

LES OBJECTIFS DE LA REFORME DE 1962 ET SON APPLICATION

Les principes:

Comme dans toute société traditionnelle, l'éducation aussi bien réligieuse que profane donnée, dans le pasée, par les bonzes avait pour fin la transmission des traditions et de la culture nationales afin de permettre à l'individu de mieux s'intégrer dans la communauté villageoise. Mais notre societe moderne est devenue changeante et il s'agissait d'insérer notre enseignement dans le contexte socio-economique d'une société en plein mutation; donc ne plus chercher à adapter l'individu à son groupe mais lui permettre de se réadapter sans cesse au changement rapide des structures et au rythme d'évolution des connaissances. C'est l'esprit de la Réforme de l'Education de 1962 qui donne la priorité à l'acquisition des habitudes avant celle des connaissances, à la pratique sur la théorie sans cependant négliger un constant retour aux sources, intégrant ainsi tradition et progrès et enrichissant, de ce fait, l'individu de valeurs et d'expériences.

Quelles qu'aient pu être, dans la réalité, ses insuffisances et ses limites, l'enseignement traditionnel donné dans les pagodes avait un objectif adéquat a une société statique limitée à la communaute villageoise mais contenait cependant quelques principes universels de sagesse. Il a été supplanté durant la periode coloniale par un enseignement qui avait aussi pour objectif de former un "bon citoyen"mais dans le sens conçu par la puissance colonisatrice, à savoir des fonctionnaires subalternes au service au service de l'administration coloniale, c'est-à-dire le minimum de cadres d'exécution pour que les rouages administratifs puissent fonctionners, l'extension en quantité et en qualite n'ayant jamais été le sourci majeur. Cet héritage a marqué de son empreinte notre système d'enseignement aussi bien dans son orientation que dans sa structure et il a fallu attendre 1962 pour repenser les principes de base de notre système éducatif à la suite de son inadéquation aux situations nouvelles d'un pays indépendant et de l'aspiration de la

population à l'éducation.

L'aspiration de plus en plus grande de la population à l'éducation et l'inadaptation de l'ancien système d'éducation aux situations nouvelles, telles sont les deux constatations fondamentales d'où est née l'idée de la réforme, et à l'enseignement traditionnel hérité du passé, plus academique que pratique, nous avons cherché à substituer un enseiggement moderne plus adapté aux conditions économiques et sociales du pays. Pour répondre aux besoins du pays, la nationalisation de l'éducation envisagée voulait aller plus lein qu'un simple changement de statut des établissements, visant une transformation profonde des programmes d'enseignement, des objectifs et des méthodes, ce qui implique une laocisation de l'enseignement et des enseignants.

Si le développement du pays est affaire d'éducation essentiellement, cela suppose que l'éducation comprenne qu'elle doit être au service du développement et c'est pour cette raison que la réforme de 1962 a posé comme premier principe:

a) la liaison de l'éducation au developpement économique et social, donc son adaptation aux besoins provisibles de l'économie et cella par:

- Une réforme radicale des programmes qui, dans les différentes disciplines, doivent s'inspirer des élements du milieu local environment dans lequel vit l'enfant et être orientes vers l'acquisition des habitudes et des connaissances indispensables à l'amelioration immédiate du niveau de vie et de la production avee une éventuelle collaboration des ministères à vocation économique et social à la definition des objectifs et à l'elaboration des programmes.

- Pour cela, il faut partir de la pratique pour aller vers la théorie et introduire le travail manuel et, dans tous les cases possibles, le travail rentable; les nouveaux programmes insistent sur la nécessité de centrer tout l'enseignement autour de l'observation et de l'amélioration du milieu et prévoient la création de jardins scolaires et de coopératives scolaires concus non comme activités annexes mais comme partie integrante de l'enseignement, lire ecrire et compter ...etc... étant des moyens du developpeme et non des buts en soi.

- Les nouveaux programmes insistent d'avantage sur l'acquisition des habitudes que sur celle des connaissances, sur la formation

des attitudes qui sont à la base du développement tels que l'esprit d'observation, la notion de rendement, la co-opération et le travail en équipe, l'éducation de l'effort, l'ordre et l'exactitude, ...etc ... sans négliger cependant l'equilibre humain et social et de ce fait vitaliser la culture populaire et étendre l'énseignement et la loi bouddhiques. L'accent est mis sur les mouvements de jeunesse au sein de l'école afin de développer l'esprit d'initiative et de responsabilite des enfants et, en même temps, sous forme d'associations, faire partager aux parents la responsabilité dans la formation de leurs enfants.

b) le second principe est relatif à l'intégration de l'éducation scolaire grâce à la méthode des centres d'interêt, à la continuité dans l'acquisition des connaissances et à la continuité des différents degrés d'enseignement et cela afin de permettre aux enfants les mieux doués, quelle que soit leur origine sociale, d'accéder aux postes de responsabilité où leurs aptitudes peuvent les conduire; c'est dans cette optique d'éducation permanente qu'a été également prévue l'intégration de l'éducation des adultes .

c) Enfin, le troisieme principe concerne la mobilisation de toutes les ressources éducatives de la nation, l'école n'étant qu'un des instruments d'éducation, entre beaucoup d'autres et, à cet effet, il a été crée une commission spéciale pour le développement de l'éducation en liaison avec le developpement économique et social, commission qui rassemble les représentants des différents ministères et services pouvant avoir une action éducative, la radio, la presse, les associations sportives eu feminines, la vulgarisation agricole, sanitaire...etc... devant se mettre au service de l'éducation.

APPLICATION ET DIFFICULTES

Quantitativement, l'objectif initial était d'assurer un minimum d'éducation à l'ensemble de la population, ce qui supposait la scolarisation totale des enfants de 6 à 12 ans et l'éducation de tous ceux (adolescents et adultes) qui n'ent pas eu la chance de fréquenter l'école eu qui ont abadonné l'école en cours de scolarité. Cela revenait à multiplier le nombre d'écoles et à augmenter l'effectif correspondant des enseignants, ce qui était impossible réaliser pour nos modestes moyens et compte tenu de la capacité de l'appareil de formation des maîtres. Aussi avons nous choisi une voie plus réaliste et avons entamé un processus de scolarisation progressive et rationnelle qui nous a permis d'atteindre

les objectifs quantitatifs fixés par la projection à long terme élaborée par la mission consultative de l'UNESCO pour la planification de l'éducation en Asie avec près de 240,000 élèves dans le primaire en 1971-72, la projection établie pour 1976 prévoyant 260,000 élèves. Sous l'angle de la laosization, celle ci est déjà réalisée dans l'enseignement primaire et à l'heure actuelle tout le personnel aussi bien enseignant qu'administratif est lao et tout le programme d'enseignement est en lao, la langue francaise étant enseignée seulement comme langue étrangère à partir de la 4ème année primaire. Malgré ces chiffres éloquents, nous sommes loin de satisfaire a nos besoins réels et pour bien faire, il faudra arriver à scolariser le double compte tenu du taux de croissance de notre population; mais nos classes sont déjà surpeuplées et un instituteur doit, dans certaines classes, s'occuper de plus de cinquante élèves. Par ailleurs, si l'Etat, on 1962, avait projeté la création de 1,500 centres ruraux d'éducation communautaire en 3 ans, l'insécurité de certaines regions en zone rurale, la difficulté des communications et la limitations des ressources nationales n'ent permis que la création de 900 centres a ce jour.

Qualitativement, l'application de la reforme à rencontre de grandes difficultée et l'on s'est heurté à la routine qui tend à perpetuer des matières dont tout le monde reconnait qu'elles sont inutiles et des méthodes qui se sont révélées inadéquates, on s'est heurte à l'esprit de facilité qui préfère continuer tranquillement sur une fausse route déjà tracée que de debroussailler dans la bonne direction, à l'idolatrie des examens traditionnels et au culte du diplome, aux préjugés contre le travail manuel ...etc... Habitués à l'ancien régime qui a formé l'élite intellectuelle, nos enseignants se sont interrogés sur l'efficacité du nouveau système et ont tente de s'accrocher à la forme traditionnelle d'éducation, cette réaction provenant de la mauvaise comprehension ou de l'incomprehension de la reforme ellemême. Par ailleurs, la réforme entraine certains changements dans la technique pédagogique et suppose un changement des programmes d'études et des méthodes d'enseignement donc le recyclage des instituteurs, ce qui necessite du temps, du materiel et des moyens dont nous ne disponsons pas en quantité suffisante. En outre il n'a pas été facile d'enlever de la mentalité des parents que l'éducation ne doit pas uniquement conduire au fonctionnariat mais à un marché du travail très varié. Si les parents participent à la vie de l'école grâce aux nonbreuses associations qui se sont crées, par contre les nouvements de jeunesse sent presque inexistants. De plus il s'est

avere difficile d'assurer une coordination entre les differents types d'enseignement, les efforts que nous avons mis au stade de l'enseignement élémentaire ne nous ont permis d'assurer une continuité régulière jusqu'en secondaire d'ou le goulet d'étranglement que nous avons actuellement entre le primaire et le secondaire tant du point de vue quantitatif que qualitatif puisque les 90% d'élèves qui terminent le cycle primaire et ne peuvent poursuivre des études secondaires sont sans qualification aucune pour être absorbés par le secteur productif.

NOUVELLES ORIENTATIONS

Notre préoccupation prioritaire étant l'amélioration qualitative du système éducatif et son adaptation aux réalités nationales, des measures ont été prises récement.

- pour réduire la déperdition scolaire dont une des causes essentielles réside dans la faible qualification des enseignants, une série de recyclages ont été entrepris;

- les programmes d'enseignement ont été modifiés et nous avons entame l'organisation de séminaires regroupant les principaux responsables de l'enseignement primaire au niveau central et aux niveaux provincial et local afin de définir les objectifs pour chaque discipline et d'élaborer les programmes conséquents;

- par ailleurs, une importance speciale a été récemment accordée au role pedagogique des responsables de l'éducation plus particulièrement au niveau local, par la création d'un corps d'inspecteurs d'enseignement, creation par laquelle on a dissocié le rôle administratif et le rôle pedagogique qui étaient jusqu'alors assumés par la même personne.

Vientiane, le 6 Février 1973
Bounthong Vixaysakd.

Discussion Summary of Mr. Bounthong's Paper

Participant: What is the current percentage of school age children who finish primary school in Laos and what is the per capita cost per pupil?

Speaker: No exact figure has been obtained, however the percentage of dropouts is rather high. The per capita cost per pupil is approximately US$ 10.

Participant: Do the monks help teaching in schools? At what level is the teacher expected to assume both the teaching and administrative roles?

Speaker: At present there is still co-operation in education between the monks and the teacher, but pupils no longer study in pagodas. Efforts have been made to rid the teacher of his administrative duties.

Participant: How does the lack of qualifications on the part of instructors result in education wastage? Are there other causes of wastage?

Speaker: Wastage of this sort is noted mostly in rural areas where teachers are not adequately trained. Education wastage can occur when the school programme is not well adapted to the community

Participant: What is the current percentage of primary school age children who are in school?

Speaker: About 40%.

Participant: In Laos, Khmer and Thailand where Buddhism has strong influence, informal education is more important than formal education. In Vietnam, elementary education loses its top teachers to higher level education. This is not a healthy situation as every level needs specialists. Vietnam expects to share this problem with Laos and Khmer and work out solutions.

Participant: When the Innotech Center has moved to Saigon, educators of the three countries concerned will have the opportunity to discuss this problem.

Participant: Khmer also has the same problem. Primary teachers do not enjoy as high a standing as secondary teachers who teach less hours but earn more.

Participant: What is the percentage of elementary teachers lost to secondary level and of secondary level to higher level?

Speaker: No exact figure is available. The loss is about 1% but the point is that those lost to higher levels are the best prospective leaders that elementary level has. The reason is that teachers of secondary level and higher level enjoy better working conditions.

Participant: In 1947, the Philippines experienced the same problem that Vietnam has presently. Elementary school teachers who were qualified for secondary school teaching left to become secondary school teachers. Incentives in terms of opportunities for advancement in position and of adjustment in pay scale were provided to stop this drain in manpower in elementary schools. Additional higher positions like those of guidance counselors and co-ordinators, head teachers and Principals I, II, and III in barrio (village) elementary schools were created. The starting salaries of elementary school teachers were raised to equal those of secondary school teachers.

Participant: Indonesia has the same problem. Since elementary school teachers were traditionally regarded as educationally deprived people and they received low pay, it is no wonder they looked up to higher levels. As a remedy, the existing salary system should be modified, but it could mean a higher budget

Participant: More and more educators to-day have to become economists. Canada has experienced a fast expansion of education, to such an extent that economists predict that if nothing is

done about it, by 1980 all the national budget must be used for education and health. Our provincial Government has therefore set a maximum for educational expenditure. So it is time for educators, pressed by the turmoil, to look at what needs are, rather than wants. A financial crisis is on the way because economic planners and politicians see that the tax payer will not support more money for education.

The biggest cost incurred is for teachers' salaries, yet we keep on asking for increases. Research should be directed to finding less expensive teachers and the best student teacher ratio which yields the greatest return. Several projects have been presented since the beginning of the seminar, namely multi-class system, monitoring, teaching assistants, local resource persons, etc. If we concentrate on the problems of learning rather than the problems of teaching then the rural - urban dichotomy with which we are concerned might turn out to be a false one.

If teachers were helped to deal with students by accepting where they are at in terms of learning and building on that as has been mentioned by the speaker from the Khmer Republic, then this approach would be valid for all schools although what goes on in all schools would not necessarily be the same. Several delegates have spoken about looking for "change points" but that of "examinations" has not been developed. One would wonder how fast teaching methods would be changed if examination systems were changed. Other topics worth considering, might be cheap text material, and concepts of teacher education including the feasibility of National Service Corps and study-service teachers from universities.

Participant: Allocation for education has been scrutinized, but attention must be drawn to the fact that the defense budget is often three or four times more than that of education.

HOW TO APPROACH THE PROBLEM OF DEVELOPING AN EFFECTIVE AND ECONOMICAL DELIVERY SYSTEM FOR PRIMARY EDUCATION

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I. The Problem

Indonesia is confronted, as is the case of all developing countries, with a multi-variety of problems. The most important one is due to the increase of population which, within formal educational system, gives rise to the problem of an increased enrollment and the need to provide additional facilities and money. In 1950 primary school enrollment was about 5 million, 35% of the primary school age population. In 1970 the number increased to 15 million or 69% of the population concerned. This is just one example illustrating the problem.

While enrollment was increasing, the non-schooling gap remained about the same. There were 9 million children of primary school age who could not be accomodated in 1950, and in 1970, twenty years later, the gap was reduced by only 2 million in spite of the 10 million increase in enrollment. The non-schooling gap was caused mainly by the mounting primary school age population combined with the ever-increasing demand for formal education -- a demand which could not be met within Indonesia's capability to provide new places and facilities in the schools due to the shortage of resources.

In 1979 we will need to provide 12 million new places and appoint more than 300,000 new teachers if we are to deliver education to all the primary school age children. This means that in the coming seven years we would have to provide 345 billion rupiahs (1 US$ = Rp 415,-) for additional pupil places and another 70 billion rupiahs for operational costs in the 1979 school year only. This last amount is equal to 200% of the 1972 Ministry of Education budget. In the mean time we need an increased budget to improve the quality of the primary school education.

There has been strong pressure for quantitative expansion and eagerness to expand especially at the primary level, but there is also a strong need for qualitative improvement. And both needs, from the standpoint of financial constraints, cannot always be accomodated. Although sheer quantitative expansion could sacrifice quantity, putting more investment into improving quality would result in the restriction of enrollment. This is the dilemma. Our present primary school system has been imbedded in the tissue of our culture for decades. It has become part of our culture. It will take time to make a total revision. Whereas the problem itself is presently with us. However, the present system has, to some extent, made positive contributions to solving the problem of mass primary education. Thus, the cry for a new approach does not necessarily mean that the present system should be abolished entirely. Rather, the challenge invites the development of an alternative system to complement the present system.

II. Basic principles to approach the problems

Other problems that Indonesia is now facing, besides the pressure and need for quantitative expansion, qualitative improvement, and shortage of resources, are problems concerning the basic concepts of education, of planning and of an outdated educational system.

In the past education has been considered as identical with schooling, rather than realising that educational processes also happen before schooling, out of school, and after schooling. Such a concept does not encompass the possibility of delivering education out of the school, does not help promote a responsibility for education in those who have no direct relation with the school, and does not help stress that the pupil still needs to learn after finishing the school. Indonesia is now abandoning this basic concept of education and adopting the concept of life-long education. This is the first principle used to approach the problem.

Thus education is not only the responsibility of the government, but the responsibility of the whole society as well. Then, the second principle is that the financing of education becomes the joint responsibility of the parents, the community and the government.

The third, fourth and fifth principles that will be mentioned below

are concerned with planning. We can not expect, while seriously and systematically launching population education and family planning, a stop in the pressure for quantitative expansion; and qualitative improvement. The population will continue to increase anyway, and the society will demand better educational opportunities, and the resources will still be limited. Thus, scarce resources should be used as efficiently and effectively as possible. This point leads to the need for improving educational planning.

So, the third principle is that in planning special care has to be given to the improvement of quality so that the pressure of quantitative expansion will not push aside the issue of quality.

The fourth principle is that in planning the plan has to be comprehensive covering both formal and non-formal education. Any action in one component should have a meaningful and positive connection with all the others in the total system. Thus the plan should be related, among other things, to the manpower need of the society and the people's aspirations.

The fifth principle is that in planning the planner must be able to see the needs and the problems far ahead in the future.

Education is a social process and educational institutions are social institutions. Thus the curriculum should be relevant to the need of both learners and the society. In the past curriculum has been subject matter oriented, geared mainly to intellectual education, detached from the problems and the needs of the society. Thus it does not help very much in satisfying the needs of the development of the nation. This situation must be changed. Thus, the sixth principle is that the education system should be designed to support the development of the nation. Instead of subject matter oriented, the curriculum should be life experience oriented. The curriculum should be geared not only to intellectual education, but also to the development of creative and innovative attitudes, to the development of the capability to communicate productively and positively within the environment, and to the development of marketable skills. In other words education should be integrated with the prevailing socio-economic-cultural settings.

These six principles should be used simultaneously to approach the problem if the result is to be significant. Otherwise, one might be able to tackle one problem but other problems in other sectors might become more serious. The application of these principles need the existence of a good planning body equipped with the right manpower and the necessary facilities.

III. Approaches to an effective and economical delivery system

Obviously there are many alternative approaches to deliver education to primary school age children which could be applied. One of these which is being explored is what we call educational packages. This delivery system can be in the form of textbooks, reading and instructional materials, radio broadcasting programs or any combination of these, and can be delivered through formal or non-formal education as described below.

1. Through formal education. This strategy for improvements in primary school is designed to achieve selective improvement for all schools in the shortest possible time. To achieve the short-term objectives a wide range of programmes and projects has been set up covering the following items:

1.1 Textbooks - to improve teaching at the Primary School level in:
- Science
- Mathematics
- Social Sciences, and
- National Language

A textbook development programme was started in 1969 with the training of textbook writers. Textbooks were written, printed and distributed free to all primary school students.

The finds of the National Assessment of Education Project (PPNP) told us that owing to lack of textbooks, teachers and pupils have to give a large amount of their time - a conservative estimate would be one-third in primary schools to dictation. Even with allowance for any slight educational gain resulting from this process, some 30% of the time of both teachers and pupils is thus a dead loss.

In monetary terms this means that 30% of the 45 billion rupiahs estimated as being expended on primary education by provincial governments in 1971 - amounting to some 15 billion rupiahs, or about US$36 millions at the exchange rate used earlier - is being wasted annually. These figures do not include the substantial contributions made by the communities. There is also a loss to the country and to the economy through the lowered educational standard of manpower.

This massive loss could not be avoided by reducing expenditure since the schools and the teachers were there and had to be retained. It could be eliminated only by trying to increase the economic returns for the money spent. This means obtaining more and better learning - or, as it is usually expressed, by improving the quality of education - in return for the expenditure. To get this additional learning three factors are necessary:

a. better curricula
b. better teaching, and
c. more and better teaching materials

These three factors are inter-dependent.

1.2 Instructional materials

Owing to the lack of instructional material it was recognized that there are hundreds of thousands of children and even teachers in schools throughout Indonesia who have never seen even a picture of the types of things commonly considered essentials in everyday life. Even their own bodies were still a mystery to them. The universe and ecosystem were foreign. The situation in the already woefully inadequate school was deteriorating. There were, for example, fewer textbooks in 1970 than there were in 1968; there were fewer good teachers, less instructional equipment and substandard classrooms to take care of an ever increasing number of children. With so many handicaps it was obvious that the preparation of manpower and the development of knowledgeable citizens were being seriously hampered. It was therefore agreed that along with the supply of text-books the

supply of teaching aids would receive the highest priority. The gains in terms of economic efficiency and effectiveness as of this approach will be similar to those mentioned earlier in the discussion of the provision of textbooks.

1.3 Teachers Upgrading

In planning for the development of textbooks and instructional materials it was fully recognized that they must go hand in hand with the training of teachers who would be responsible for better and efficient utilization of them. The present facts are that only 40% of primary teachers are trained, 50% are partly trained and 10% untrained - which, in practice, often means that they themselves have completed little more than primary education. A first step in getting better teaching, therefore, is to train the untrained and to complete the training of the partly trained teachers. Such training must include experience in the use of textbooks and teaching materials, all of which must also be made available. In turn, the teaching materials, cannot be designed and their use taught without specifying the curricula with which they are related. Conversely, new curricula are likely to require new teaching materials and new teaching methods.

The present curriculum is being revised, manuscripts of textbooks are being produced, and audio-visual aid prototypes are being designed. When this is done, the next problem is how the curricular content is to be communicated to teachers and pupils.

For this purpose mass communication media, seminars and assemblies of teachers have a part to play. However, reliance solely on such means would require many years before any appreciable impact could be made on the education system.

1.4 Educational Radio Broadcasting

Clearly, therefore, additional means of communication must be found, such as radio and television. Since, in Indonesia, economically and technically these are serious obstacles to the early large-scale use of television, priority should go

to the development of educational radio.

Even in addition to the traditional means of introducing curricula changes, such as improving and increasing the quantity of teaching materials and upgrading teachers, radio broadcasting would still be preferable since it could make the quality and effectiveness of the presentation of materials considerably higher than could otherwise be achieved.

Radio has eight great advantages in this connection, namely:

1.4.1 Radio alone (in the absence of television) can bring about the rapid upgrading of the enormous numbers of teachers involved. This can happen partly by actively associating with the broadcast lessons in preparing pupils for them and following them up by additional information, discussions, questions and exercises, and partly by direct broadcasts to the teachers on pædagogy and on the subjects being taught.

1.4.2 Radio permits curricula to be revised in all grades simultaneously, since the broadcasts can be easily adapted from year to year to take account of pupils' previous studies. If printed materials only are used changes must be introduced first in the lowest grade and only then by annual progression in the higher ones.

1.4.3 Radio permits a much more flexible approach to curriculum development than print alone. It is a difficult task to get agreement on the content of a textbook, and production of revised editions is often difficult and expensive. Broadcasts although taped for re-issue if needed, divide the material into small units which can be easily and cheaply revised as needed.

1.4.4 Since broadcasts are limited to only a small part of class time, they emphasize the most important points in the subjects being dealt with, thus clarifying matters for both teachers and pupils.

1.4.5 Radio can bring into play resources not available to the schools generally, such as dramatic presentation, sound effects and music. This can be of help to rural teachers especially. It is especially helpful in teaching languages which are not the native language of the teacher.

1.4.6 The Broadcasts act as pace makers in introducing new material which can be a great help to teachers.

1.4.7 The reaction of parents and the general public to the new curricula will be an important factor in their success or failure. Radio can be used to explain to adults the aims and nature of changes proposed and introduced, and help to gain their support. Such use is likely to be particularly important in rural areas.

1.4.8 Less printed matter is needed to produce a given result, thus reducing printing problems and costs.

2. Through non-formal education. The delivery of educational packages through non-formal education is being designed to provide for as many educationally deprived children as possible, particularly for primary school dropouts.

Early in the First Five Year Plan steps were taken to make education more relevant to developmental needs and to allow greater flexibility at the local level. The concept of the school's responsibility for the education of the community was announced. In a Basic Memorandum of 25 November 1970 a significant policy statement appeared:

> "The school should be an integral part of the community where it is located. In line with the lifelong education principle, it should be bi-functional; capable of providing formal and non-formal education, both for young people and adults."

While this statement set into motion some new thinking about the responsibility of the schools to the community, it still did not clearly open the way to community participation and the kind of

mutual assistance in which the power of gotong royong could be brought into play. The life-long education principle demands that the vehicle of education is not restricted to the schools, but may be the places of work, play, and living, such as the family, factory, office, plantation, recreation, sport and art centers and other institutions. While this moves the concept of education far beyond the confines of the classroom, the problem then becomes one of how to plan, organize, staff, finance and administer such a multi-faceted system.

Significant help was received in April 1972 by the issuance of Presidential Decree Number 34/72 which stated:

> "The Minister of Education and Culture has the overall duties and responsibilities for the development of education and training, whether these are carried out by the government or privately."

Explorations are being made to develop learning centers in the schools to serve out-of-school children and adults. The new policy, however, broadens the scope and functions of these centers far beyond the provision of learning materials. The present concept of Learning Centers is an attempt to reach out into the community rather than to merely draw people into a kind of community school.

What is the Learning Center going to be and what will make it different from any good community school? The answers to these questions are not yet fully developed, but their beginnings may be found by refering to three basic concepts which, when combined, give the Learning Center some of the uniqueness of its character:

2.1 Gotong royong or mutual assistance which, in its simpliest form means people working together voluntarily to meet the needs of individuals, the community or the larger society;

2.2 The concept of the library as a community learning materials center. This implies a central place for the collection, storage, and dissemination of information to be used by school and community;

2.3 The community service function of the school which is expressed by the active role of the school staff in helping to apply knowledge and skills to the solution of community problems.

IV. Conclusion

What system or alternative systems could be thought of as efficient and effective means to meet the demand for mass education? This is the core of the problem mentioned in section one. The question asks for a mass delivery system, i.e., a system that could be used to deliver education to as many people as possible, through the most economic and effective ways. The answer or answers which should be chosen are those that are in agreement with the principles mentioned in Section II.

This means that the system should include the formal and non-formal education, should have mechanisms for promotive joint financing for education, should be relevant to the needs of national development, and should be an organic whole whose parts are complementary and supplementary to each other.

It is clear that this becomes a big job and needs continuous and long-range planning. But this is part of the challenge. What the challenge is demanding is not only a solution to the problems for the present time or for the near future, but a solution which would pave the way or which could be used as bases for solving future problems. Otherwise the present solution would function just as a temporary solution that would make future problems more difficult to tackle.

There are so many children who need education, but many of them can not afford to be in school regularly as required by the traditional school. They can only become part-time students. And this is what the delivery system using educational packages is trying to meet through the establishment of Learning Centers. In the learning centers people can come when they have the time to learn or to practise certain educational packages relevant to their need. Or, people can ask the center to send certain educational packages at a time and place convenient to them. This would help those who can

not be accommodated in school and those who drop out.

Indonesia is wondering if the participants of this seminar would like to share their comments on any part of what has just been presented and whether the SEAMEO member countries would be interested in co-operating on the further development of learning centres and educational packages as a delivery system for mass primary education.

Discussion Summary of Mr. Hussin's Paper

Participant: Textbooks are a problem for most parents. The effort by Indonesia in the textbook distribution project is praiseworthy. Are the same texts used throughout the country? Is textbook writing a one-man show or a joint effort?

Speaker: The textbook project was started in 1969. The Government only pays for the printing cost;paper is provided by UNICEF, Canada and Denmark. The same textbooks are used all over Indonesia. As Primary Education is under the Ministry of Home Affairs, books are distributed through this Ministry's outlets. Authors' royalities are included in the cost borne by the Government.

Participant: What percentage is allocated to textbook preparation? To the reprinting of additional copies? Where in the school are the books stored?

Speaker: 500 billion rupiahs out of the 900 million rupiahs educational development budget are used for the textbook development project. Pupils are allowed to keep the books throughout the school year and return them by the end of the year. The average book life is three years; 4 million books have been printed for three million pupils, so there is one a million reserve stock.

Participant: Is priority given to certain subjects in the printing of books for different grades, for example Reading and Arithmetic for first grade and Social Studies for higher grades?

Speaker: Yes.

Participant: Who will teach and use educational packages? Are there provisions that those students who finish the packages will eventually be absorbed in the mainstream of the formal education system?

Speaker: Educational packages is a new idea of our efforts. They are used practically everywhere. In an experiment in East

Java, the teaching of educational packages was assumed by local people who had some skill after a certain time of training, from three to nine weeks.

Participant: Does Indonesia have educational radio now or is she planning for it?

Speaker: Three pilot projects are underway in three different places, the main purpose being upgrading teachers.

Participant: Educational radio serves the same purpose in El Salvador, but the problem remains the incentives for teachers to improve themselves. What is the method used in Indonesia?

Speaker: Promotion and increase in salary. 84% of the education budget goes to teachers' salaries, perhaps it will be higher in the future. Primary school teachers' salaries are still very low though, so they are raised about 30% every year. Financially, primary education is under the Home Affairs Ministry, the Ministry of Education being only responsible for the curriculum. Efforts are being made to transfer the budget for teachers' salaries to the Ministry of Education.

Participant: The paper states that the education budget is expected to be doubled by 1979. Qualitative changes are also planned; is there any estimate of cost for implementing the proposed changes?

Speaker: The Ministry of Education at present pays for secondary and tertiary education costs only. The 1979 budget is for primary education.

Participant: Could you tell us something about the production of 135 million textbooks assisted by the World Bank?

Speaker: The World Bank helps in the printing of textbooks. After printing and distribution of books, the problem now is teacher upgrading. Teachers and local supervisors are not ready yet to cope with the contents of the new textbooks.

Participant: The initial cost of the educational packages project is high but recurring costs could be less. Will fewer teachers and fewer books be required?

Speaker: Recurrent costs will be reduced, so will the number of formal school teachers. The average school size now is 200 per school, and efforts are being made to raise the ratio. A great deal of money has been spent for teachers upgrading. Radio does help reduce it. It costs 50 cents per teacher per year for upgrading by radio as compared with US$12 per teacher if other means are used.

Participant: Is the Learning Center part of the school or is the school a learning center itself?

Speaker: Learning Centers use the school facilities. Wherever schools are not available, learning centers are schools themselves.

Participant: How are Teaching Aids used on the national scale?

Speaker: Teaching Aids should be simple and inexpensive. Teachers are trained to make Teaching Aids out of local materials. Science Kits from the Netherlands are good but expensive, about 80,000 rupiahs per kit; those from India cost less, about 9,000 rupiahs each; one made out of local resources costs 1,000 rupiahs only.

Participant: Pre-service education like in-service training has an important role in improving the teachers' preparation for quality education. What is the yearly output of teacher education institutions in terms of graduates? What per cent is supplied by private teacher training institutions? As regards untrained teachers, are they still employed?

Speaker: From 25,000 to 30,000 student-teachers graduate every year, and only some of them are appointed and paid by local districts or provinces. There are 470 teacher training centers, of which 197 are public. The enrolment is 70% public and 30% private. Untrained and partially-trained teachers continue teaching.

MINIMUM FORMATION EDUCATION
An Ethiopian Venture For Universal Basic Education

by Haile Yesus Abeje
Assistant Minister for Primary and Adult Education
Ministry of Education and Fine Arts
Addis Ababa , ETHIOPIA

Mr. Chairman,

It is an honour for me to be here in this beautiful city of Singapore, to attend this important seminar, because this makes it possible for me to learn more from the discussions and deliberations of the seminar on the vital issue of effective and economic delivery of primary education.

I feel especial honour, for being called upon, to share with you, the Ethiopian exercise, the Ethiopian bold new approaches suggested by the Education Sector Review, in response to the demanding educational problems of our day.

Ethiopia is an age old independent country situated in the horn of Africa, and has a population of some 25 million people. Education dates back to the sixth century B.C., when the Sabean alphabet was used for learning purposes. Beginning in the early years of the Christian era, the churches of Ethiopia developed school systems which over the centruries served not only as focal points for learning but also prepared the nation's religious and governmental leaders.

The first secular schools were started early in this century and a comprehensive government school system has now been established and supplemented importantly with schools maintained by the Ethiopian Orthodox Church and other religious groups and private agencies.

Achievement in education in the last thirty years has been remarkable when seen against the situation three decades ago. Starting from a low base, the system has met most of the nation's needs for trained middle and high level manpower.

However, development of the Ethiopian education system has been marked by the spirit of constructive dissatisfaction and the quest for further

improvement, rather than contentment with the progress being made.

The quest for change in education was a result of many forces and factors at work. The insatiable quest and demand for more and better education greatly exceeded the supply. The inadequacy of the preparation of those passing through its pipeline further aggravated the situation.

Dissatisfaction with the existing education system necessitated an urgent analysis of present education, and to effect reforms to meet the changing needs of the individual learner and the society.

I. EDUCATION SECTOR REVIEW

Thus the Ministry of Education, well aware of the problems related with the qualitative and quantitative aspects of the education system, responded positively with a significant measure, which attested to its determination and favourable disposition to make fundamental changes in the educational system. The response was the launching of the Education Sector Review.

The Education Sector Review aimed at:

(a) an expanded educational system to reach more of the school age children as well as adults. The Review underscored the fact that education must be reoriented to cater to the needs of the majority of the Ethiopian people. Basic education or education for minimumm formation for all citizens has been accepted as a fundamental mission to be diligently sought.

(b) It has also been accepted that the nation's economy and its educational system are vitally and intimately interrelated: educational growth is dependent on finance, and economic growth is dependent on the skilled personnel produced by the education system.Therefore, the right type of education was a necessary pre-requisite for economic growth and social betterment.

(c) It has been recognized that education must be founded on the rich base of the Ethiopian history and culture. It must foster in each individual pride and appreaciation of the nation's heritage and a vision of the future. In short the nation's education development must grow from and enhance Ethiopianization in the broadest sense of this concept.

(d) The Review has sought for a realistic approach from the economic , political, and social points of view. Attention has been focussed on maintaining a proper balance between the ideal and the possible.

Believing in the fact that expansion and improvement are possible through long-term planning and continuous evaluation and appraisal of the work being done in education, and realizing that educational programmes should not remain static and lag behind realistic expectations, the Ethiopian Government (Ministry of Education and Fine Arts) undertook a comprehensive analysis of educational needs of Ethiopia.

In October 1971, the Education Sector Review was launched with the following responsibilities:

(1) To analyse the education and training system of Ethiopia, and its capability for promoting economic, social and cultural development;

(2) To suggest, where necessary, ways to improve and expand the education and training system, so that it might achieve aims relevant both to the society and the overall development of the country;

(3) To suggest ways in which education could best be utilized to promote national integration; and

(4) To identify priority studies and investments in education and training.

The Education Sector Review made use of the talents and experience of both national and international personalities in accomplishing its important task. Fourteen Task Forces and five small Working Groups were manned by 81 highly qualified people, of whom the majority were Ethiopians drawn from various governmental and non governmental agencies. Foreign members of the Task Forces were residents of Ethiopia, most of them on long-term contracts, with such organizations as Unesco, ILO, the Ford Foundation and the Harvard University Development Advisory Service.

Eighty other Ethiopians and expatriates participated in the Symposium and Conference discussions as participants and consultants. There were International Panels of consultants and researchers from various universities of the United States of America, as well as professionals from governmental, parastatal and private agencies such as Unesco, IBRD and ECA. The Review enjoyed enthusiastic support of the bi-lateral an

multi-lateral agencies. The involvement of such varied agencies and reputed persons provided the study with a wealth of experience and knowledge.

Throughout the course of the Review, substantial efforts and resources were devoted to ensure full utilization of all appropriate means of study. Task force members and advisors visited more than 100 projects, institutions and agencies, including schools and training institutions at all levels, agricultural and urban development centres, literacy training centres, and educational administrative officers in provinces and districts were consulted. Questionnaires were completed by hundreds of people and interviews in depth were conducted with scores of knowledgeable authorities. One of the outstanding contributions of the Education Sector Review has been a thorough analysis of the potentials of the Ethiopian economy and its relationships with educational development. This was in realization of the fact that education development cannot take place in a vacuum; its assessment and analysis and recommendations have to be in line with economic growth and development. A symposium and final conference were held in January 1972 and July 1972 respectively, which further exemplified the continuous search by the Review Directorate for expert advice and meaningful participation by educational leaders. Thus through a wide range of interviews, review of vast amounts of relevant literature, through extensive and in-depth debate and discussion, the Education Sector Review emerged with a Recommendation calling for basic transformation of the existing education programme.

The directorate devised an ingeneous way of putting the various studies and recommendations in a consolidated and composite report.

National Goals

The Review believed that the role of education should be determined by the national goals and legitimate aspirations of the people. The following were indicated to constitute the main goals to be aimed at:

(1) Strengthen national unity through integration of her people and culture.

(2) Accelerate fast economic growth and development to ensure adequate living conditions for all her citizens.

(3) Develop a democratic society founded on freedom, equality and justice.

(4) Foster in all citizens a firm sense of right and responsibility.

(5) Shape a society appreciative of its ancient heritage, but dynamic enough to accept useful new innovations.

(6) Build a self-reliant nation that constructively participates in African and world affairs.

EDUCATIONAL OBJECTIVES

From these broad goals the following educational objectives are expected to emerge:

(1) To foster a national and scientific outlook on life; cultivate objectivity, intellectual curiousity , tolerence and broad-mindedness.

(2) To replace traditional negative attitude towards manual work by a positive one.

(3) To increase the earning capacity of the individual by providing relevant skills and knowledge; to make people economically self-sufficient.

(4) To provide scientific, technical and vocational education according to the level of education in keeping with the needs of the Ethiopian society and economy.

(5) To cultivate the desire for life-long education, when formal schooling has been completed.

(6) To Ethiopianize the content of Education; to promote the national language Amharic as the medium of instruction at higher levels and to give a practical orientation of instruction at all levels.

(7) To create an integrated society by drawing upon the diverse cultural and linguistic elements and creating the conditions for the formation of a truly national culture and consciousness.

(8) To foster the full participation of all the people of Ethiopia in the life of the nation.

(9) To reduce the generation gap between the educated young and the traditionally-oriented old; to bridge the gap between school and society.

(10) To prepare the nation's youth to live in a world community.

(11) To equalize access to education among all parts of the country.

(12) To provide universal access to education as rapidly as possible.

BASIC PROPOSALS OF THE SECTOR REVIEW

The Ethiopian school system is envisaged as a multi-level but integrated chain. The basic component is to be the Minimum Formation Education, leading to the Middle School, High School and Community Practicums.

MINIMUM FORMATION EDUCATION (MFE)

The foundation of this new educational structure is the Minimum Formation Education. Minimum Formation Education is a programme which aims at providing basic skills and knowledge which would enable the learner to have meaningful experience in life. It is intended to prepare children and youth for a useful end that is fitting both for themselves and their community and to those who will be occupied in productive activities within their own communities. The MFE is designed to equip the individual for life in his community, to enable him to contribute towards the development of that community, and to provide a sound educational foundation, both for the minority who will proceed to in-school Middle level education, and for the majority who will progress according to the opportunities available to them; out-of-school education and Community Practicums. Completion of this MFE programme will take a maximum of four years (grade 1-4) under the shift system.

The four years of MFE programme should be followed by four years of Middle School Education (grade 5-8). The method and criteria of admitting pupils to the Middle School will be based on achievement and aptitude for further schooling. The final four years of secondary school (grades 9-12) will by necessity be concerned with manpower development, both as to further training at the University level and for jobs at the medium skill level.

COMMUNITY PRACTICUMS

Following the MFE and running parallel with the Middle School and High School will be the Community Practicums devised to provide training

in local crafts industries, and agricultural activities. Community Practicum means making use of certain of the school facilities and materials, and vice versa, by a group of people gatherd together to learn or practice certain skills in an out-of-school situation. It is an inter-related in-school and out-of-school practical educational experience of a semi institutionalized nature. It is essential to marry the in-school and out-of-school education to the mutual benefit of both. Although community practicums would not be a part of the formal school system, they would be closely related to it. School facilities would be made available after regular school hours to community practicums for their in-class work. Regular school teachers might serve as part-time teachers in practicums. The craftsmen offering on-the-job training in community practicums might also serve as the "community assistants" who would offer the practical training in the MFE programme. Participants would spend most of their time in practical on-the-job training and a smaller portion in related classroom instruction. They would include both those employed in a specific field and those being prepared for employment. The pupil choosing this avenue of education will apply the knowledge he acquired during the MFE training in solving problems that were not familiar to him previously.

A wide variety of community practicums would be offered to meet local and individual needs. Thus some practicums would offer training in specific skill areas, such as potteries, tanneries, blacksmith shops, cement factories, sugar refineries, drafting and surveying agencies, private professional schools, etc. The practicums will also be offered for varying lengths of time and will be cycled at varying intervals dependent on programmes, such as health education, home economics, public works, agricultural development and cottage industries, etc. As it will be a number of years before a high percentage of the nation's youth will have completed MFE, the practicums will be meanwhile made available to those without prior formal educational experience.

PRIMARY SCHOOL OPERATION AND SCHEDULE

It was suggested that a double-shift be operated in all the first level schools to enable them to cope with the expected increase in enrolment, by using the 8+1 teachers. It has also been suggested that first-level students should attend schools 220 days instead of the present 180 days in an academic year. Each teacher should take part in both the shifts -

each shift's duration being about 3 2/3 hours - teaching for about 4 2/3 hours a day. Pupils would be grouped in classes averaging 50 each.

ENROLMENT GROWTH IN PRIMARY SCHOOLS

First level enrolments should be expanded as rapidly as possible to achieve the objective of basic mass education. It is intended that ultimately all children, starting at age 7, will be enrolled in the Minimum Formation Education. However, national policy and financial resources will dictate the percentage to be admitted to both Middle school and High School. Enrolments in second and third levels will have to be related to needs for trained manpower and are expected to grow at about 2.6% per year, the same as the population growth.

PRIMARY SCHOOL CURRICULUM

It has been recommended that first level curriculum should be modified to place greater emphasis on environmental and work-oriented studies, particularly in rural areas on agriculture. The MFE School should be a unit, and its impact should be as a whole, both upon the individual and upon the community. It should provide the learners with the tools which enable them either to continue with in-school education or to contribute to the overall development programme in one of the out-of school or Community Practicum Programmes. The programmes should consist of four broad areas:

(1) Core skills, comprising communication and computational skills.

(2) Practical Activities, comprising both the practical approach to learning and actual physical work.

(3) Physical, Moral and Cultural Activities

(4) Environmental Studies, in which topic work based on Science and Social Studies will increasingly integrate all 'subject' areas and relate them to the environment in a practical manner.

PREPARATION OF TEXTBOOKS AND OTHER EDUCATIONAL MATERIALS

A major weakness in the present educational system is felt to be the lack of suitable instructional materials and textbooks. The Sector

Review endorsed the plan of the Ministry of Education to establish an Educational Materials Production Centre, which would prepare and make available instructional materials to the students on a quasi-commercial basis. It also recommended additional school libraries as sources of instructional materials. It suggested a four-fold increase in the amount spent for instructional materials.

New course books should cease to be the means of transmitting factual information only, but it should encourage pupil activity and problem solving. Each students' work book must be accompanied by a very detailed Teachers' guide. Other printed materials should be made available such as wall charts, background readers, and programmed learning materials.

INSTRUCTIONAL TECHNOLOGY AND MASS MEDIA

The Sector Review has suggested that radio and television should be regarded as basic teaching tools to be co-ordinated with printed materials in an integrated instructional programme. It has recommended for the creation of a Centre for Educational Technology. Learning becomes more meaningful to pupils if it is presented through a variety of media, and it signifies the role of mass media in maximizing learning experiences in schools. The emphasis should be on materials that are capable of appealing to the students' insterests as well as catering to their several senses.

The instructional methodology at all levels and in all systems will emphasize (a) integration of subjects, (b) enquiry method of learning, and (c) multi-media presentation of materials. As a consequence of this three-pronged approaches, a large part of the content will be organized into a "topic" or "unit" approach rather than discrete subjects. Flexible patterns of grouping students for instructional purposes, such as large groups, small groups and individualized instruction, should substitute for the traditional pattern of a class size of forty to fifty students for all instructional activities.

The Sector Review has suggested that radio could be used as a part of the mass media to provide Adult Education, instruction in agriculture, child-care, house-making, nutrition, teaching Amharic and other subjects to a vast audience throughout the country at a very low cost.

TRAINING OF PRIMARY SCHOOL TEACHERS

At present there are about 7,000 trained graduates with 10 years of general education and 2 years of training. In view of the existing financial constraints and the need to spread education more rapidly among the masses, the Sector Review has suggested that teachers with 8 years of general education and one year of training could be gainfully employed at the first level, at half the cost of the regular graduates of the Teacher Training Institutes. These teachers should be carefully selected so that they could help their students learn through experimentation, exploration and involve the community in their learning experiences, and the school in community's development. The Community Assistants may have had little or no conventional schooling, but should have knowledge of the local area, willingness to contribute to the betterment of the community and experience in certain skills e.g. local crafts, history, folk tales, etc.

The curriculum of the Teacher Training Institutes to prepare teachers in one year should be restructured to include the subjects they will be required to teach, psychology of learning, people and culture of Ethiopia, evaluation techniques, preparation of teaching materials, etc. There should be improved supervision and guidance by school-directors and supervisors and provision should be made for proper in-service training through seminars, refresher courses, etc.

The existing regularly trained graduates would give skeletal support to the whole system and the increased use of 8+1 teachers would have a marked effect on the ability of the nation to expand its first level schools within its limited financial resources and to meet its educational objectives.

SCHOOL FACILITIES AND THEIR EQUITABLE DISTRIBUTION

The Review has recommended that new schools should preferably be located in areas with low participation rates and high unfulfilled demands, especially at the first level. In each of the 102 sub-provinces, first-level schools with six class-rooms serving 600 pupils, should be equitably distributed among 100 square kilometre catchment areas having elementary school-age population of 600 or more. Later on, the building programme could shift to providing four-class-room-schools in

catchment areas with 400 to 500 schcol-age children in later part of the century, still smaller schools would be built in more sparsely populated areas. Meanwhile, some of these areas would have been served by church schools, non-formal education programmes and exposure to mass media.

The sub-provinces should bear the cost of these buildings, other than the amount available from external aid. They should make a thorough study of school construction, after determining the most economical designs and construction materials, taking into account such factors as regional variations in climate, building materials and construction methods.

In addition to existing facilities, new schools will have to be built. New facilities should include, in addition to regular sized classrooms, at least one large multi-purpose room capable of housing 150-200 students. This room can be used for large group instruction, student assemblies and physical activities during inclement weather and for general classroom instruction with a number of classes occupying the multi-purpose room at one time. Churches, community halls,and other public buildings should be considered as school locations until proper construction of suitable dwellings are completed.

EVALUATION

With the introduction of Minimum Formation Education testing procedures must be geared to the new educational aims. Significant changes would be made in test and examination procedures and they would be supplemented by additional means for evaluating student performance and capabilities. e.g. remedial work - to determine student needs in specific areas; guidance work - to channel students according to interest and aptitude; and administrative work to facilitate selection and placement of students.

The MFE programme would be oriented to local needs with the curriculum varying from place to place. Further more, under the proposed topic approach, traditional subject areas would tend to merge, making the administration of examinations at regular intervals more difficult. Student performance would, therefore, be evaluated on the basis of normal class-work and assignments which would favour a reasonable

degree of competition while not making the whole system examination-oriented.

Promotion within a given school should be decided on the basis of the student's performance in class, by teachers and directors jointly. All pupils would be awarded graded completion-of-studies certificates at the end of MFE. All pupils leaving school at a given stage - whether terminal or not - would be given achievement certificates. Promotion to a higher level of education would be decided by teachers and directors jointly, following the administration of aptitude tests and the study of pupils' report cards.

To help carry out the present and future administration of educational testing activities, it would be necessary to establish a National Examination Board, specifically charged with the running and the administration of examinations and tests. This would ensure that the aims of examinations are properly implemented. Instructions regarding the number of examination sessions per year, types and format of examinations and regulations limiting the time to be allowed for testing activities could be issued. Seminars and in-service training should be organized in order to give present teachers a working knowledge of test construction. Relevant literature would be made available and widely circulated.

ADMINISTRATIVE PROCEDURE

In order to ensure proper implementation of the programme, it would be necessary to provide an effective administrative machinery both at the national and local levels. It has been accepted that administration and management of education must be decentralized for purposes of efficiency and relevancy. As one of the most unique features of the programme is Community Practicum, an Inter-Ministerial Board on Community Practicum should be formed. Separate panels of MFE, Middle Schools, and Community Practicums would have to be created. Teaching materials should be produced as much as possible at the local level and regional centres for the production of locally designed instructional materials should be established.

NON-GOVERNMENT PRIMARY SCHOOLS

In 1970-71, non-government schools accounted for 28% of the total

elementary enrolment. In accordance with the objective of applying available funds towards the goal of maximizing first-level school enrolments, the Review proposed that the Government should encourage non-government schools by allocating funds as subsidies to approved first-level non-government schools.

II. THREE ALTERNATIVE STRATEGIES AND THE STRATEGY RECOMMENDED BY THE SECTOR REVIEW FOR FIRST-LEVEL EDUCATION

The Sector Review after concentrated deliberations and bearing in mind the basic proposals mentioned above, formulated three alternative strategies, and also its own recommended strategy, on which the future development of Ethiopian educational system could be based. These are summarized as follows:

ALTERNATIVE STRATEGY I

It provides for the continuation of the present 6-2-4 system with certain significant modifications to speed up the realization of mass education at the first level. It recommends the revision of curricula to make both primary and secondary education more practical and meaningful to the great majority of students who do not go to higher levels, by including work-oriented and environmental studies. It also provides for a double-shift system and for the employment of 8+1 teachers, teaching during a portion of both shifts. It suggests an in-take of 50 students per class in grades 1-6 and an academic year of 220 days. The primary level would generally cover students in the 7-12 age group.

ALTERNATIVE STRATEGY II

It calls for a 4-4-4 system with the curriculum in grades 1-4 changed very substantially to provide a 'Minimum Formation Education', which would emphasize meaningful activity and experience, environmental and work-oriented programmes as well as development of basic literacy, numeracy and reasoning skills. Course material would be integrated into cohesive areas of study, rather than taught as separate and discrete subjects. The school operation and schedule would be the same as suggested in Alternative Strategy I. In addition to certified 8+1 and 12+1 teachers, instructional staff would include "community assistants" who would teach practical subjects. The formal school system could be

closely co-ordinated with the non-formal but structured, system of 'Community Practicums', which would offer out-of-school education for all age-groups. The typical age-group would be 7-10.

ALTERNATIVE STRATEG ' III

It provides for two parallel educational channels:

(1) a 4-2-4 system which would accept 9 year old students or older and, in four years, prepare them for gainful employment at the local level, or for subsequent non-formal education, or for entry into Junior and Senior Secondary Schools of some selected students.

(2) a 2-3 year programme, which would enrol students of 12 years of age and older, who have had no school experience previously and give them two years of 'basic formation', to be followed by 3 years of 'secondary formation' for certain promising students.

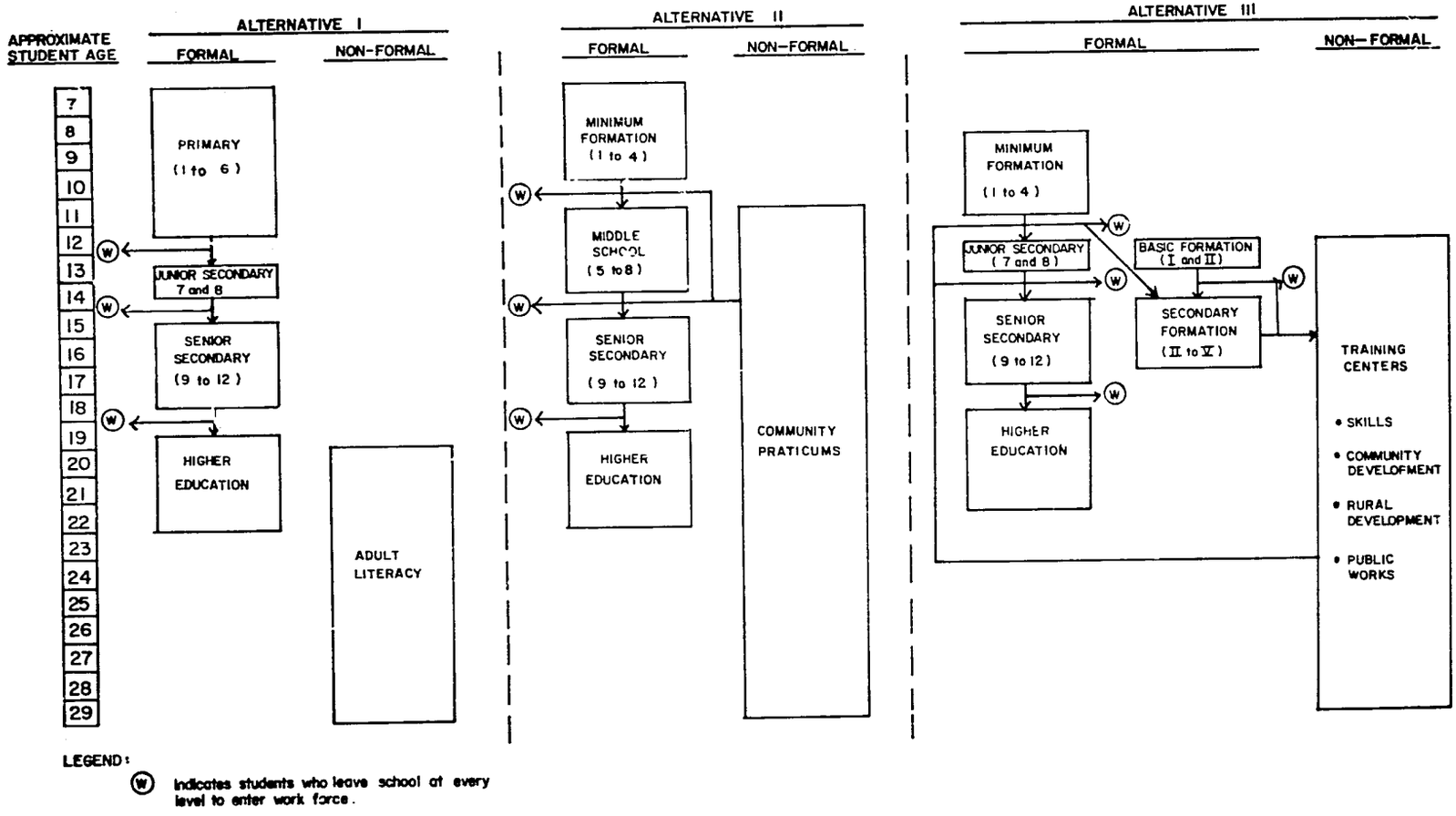
The two channels of formal education would be so co-ordinated as to permit transfer of some students from one to the other.

It includes certain features of non-formal education related to community, rural development and public-works programmes, mentioned in Alternative Strategy II. Most of the students would terminate their formal education and enter the work force. It makes similar provisions for school operations and schedule, and teachers, to those in Alternative Strategy I and Alternative Strategy II.

To facilitate reference a comparative statement of the school operating characteristics for all the above three Alternative Strategies for the first level education is given both on the chart and the table below.

Description	Alternative I Strategy	Alternative II Strategy	Alternative III Strategy
Grades	1-6	1-4	1-4
Typical age group	7-12	7-10	9-12
School days per year	220	220	220
Shifts per day	2	2	2
Pupils per class	50	50	50

ALTERNATIVE STRATEGIES FOR EDUCATION IN ETHIOPIA



LEGEND:

(W) Indicates students who leave school at every level to enter work force.

Distribution of trained teachers: i) 8+1	85%	85%	85%
ii) 12+1	15%	15%	15%
Approximate percentage of instruction by:			
i) Trained Teachers	100%	70%	70%
ii) Community Assistants	-	30%	30%

STRATEGY RECOMMENDED BY THE SECTOR REVIEW

The above three Alternative Strategies were evaluated and debated extensively during the Sector Review Conference, and at its conclusion agreement was reached on the course most favoured by Review participants. The Strategy recommended by the Sector Review incorporates modified Alternative Strategy II and certain key elements of Alternative Strategy III. It provides for the following:

(1) Four years of minimum formation education, to be made available to all children as rapidly as permitted by financial constraints.

(2) Two years of basic formation for youth and adults who have been unable to attend MFE programmes.

(3) A four-year middle school and four-year senior secondary school programme for a limited number of graduates of MFE and basic formation programmes.

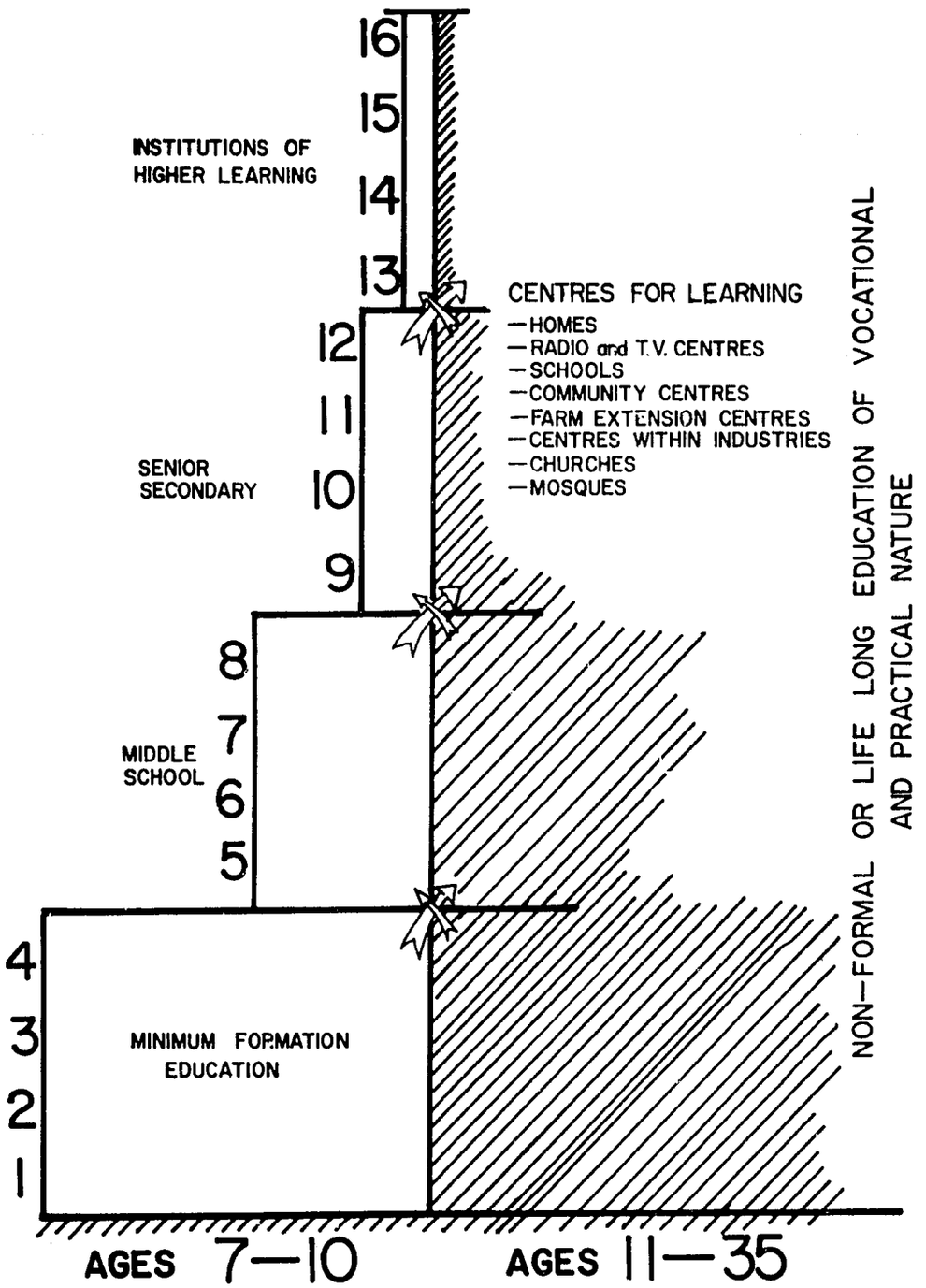
(4) An extensive system of non-formal educational programmes for youth and adults, which would be closely related to the formal system.

This strategy is illustrated in the chart below.

The participation rates under this strategy are as under:

Description	1970-80	1984-85	1989-90	1994-95	1999-2000
Age group 7-10 (MFE & Non-Govt.)	44%	45%	50%	64%	80%
Age group 13-35 (Basic Formation)	31%	31%	40%	40%	26%

STRATEGY RECOMMENDED BY THE SECTOR REVIEW



The significance of this is that of the babies born during 1972-73, 44% will enter MFE or Non-Government Primary Schools in 1979-80 and 31% will enter Basic Formation Programme six years later in 1985 86. Thus, about 75% of this age cohort will have attended first level schools. The participation rate will continue to increase and it can be seen from the above table that some 90% of the children born in 1982-83 will have access to educational opportunity, with about 50% attending MFE and non-government schools in 1989-90 and about 40% entering Basic Formation Programme six years later. With 90% participation rate, Ethiopia would have achieved universal educational opportunity for those born in 1982-83 and thereafter.

Thus, the recommended strategy assumes the implementation of the following:

(1) Improvement of curriculum of the programme to satisfy local needs.

(2) Economy in expenditure by using 8+1 teachers.

(3) Streamlining of Teacher Training Programme to meet practical needs.

(4) Strengthening of Supervisory Services.

(5) Decentralization of Administration and financial Management.

(6) Supply of improved instructional materials.

(7) Co-ordination of efforts of various agencies and institutions in the implementation of this strategy.

CONCLUSION

Assuming the implementation of all Sector Review recommendations Ethiopia would have achieved near universal basic education by the turn of the century. The Sector Review does offer certain tangible solutions to the educational problems of Ethiopia. It may not be out of place to quote here Dr. Malcolm Adiseshaiah, Chairman of the Review Conference in July 1972, who said: "Today, once more here in Addis Ababa, in this Africa Hall, we have brought to conclusion, an Ethiopian Model for a learning society, an Ethiopian Programme of educational reform, restructuation and rejuvenation. This national model we are recommending. is at once a continuation and a change, a running follow-up, and a reversal of the Addis Ababa Plan" of the 1960's.

We hope that the Ethiopian venture, the Ethiopian model might offer possibilities to countries faced with similar educational problems.

The improvement of the quality of life of our children as well as our fellow men, through education, is the noble task we are after.

This great task has to be realized with the least expenditure of financial and material resources, with a most effective management and with bold new and imaginative approaches. Education, today, poses serious problems and promises great possibilities.

It is incumbent upon us to respond to these challenges. With a will and a committment to the cause of the right type of education for all, it can be done.

Thank you.

Discussion Summary of Mr. Abeje's Paper

Speaker: In the previous discussions the problem was brought up of youth being alienated, through education, from the rural environment which is their home. The concept of community practicums as expounded in my paper seems to address itself to this particular problem. I wonder whether, in some countries, adult education should not be given priority, since unless the productive sector and home conditions are improved, the education of children will not improve. Otherwise those who are educated can be drawn away and the gap between them and the rural community from which they came will be widened. Such a situation will also create social problems in the bigger cities. The education programme should therefore address itself to the improvement of the life of the rural people since the training of adults is a crucial issue in the education of the young.

Participant: Are children in grades 1-4 too young to be exposed to community practicums, and would it not be beneficial rather, to concentrate on the acquisition of basic skills and concepts.

Speaker: The chart shows that there is a programme of basic education meant for those from 11-35 years who are out of school, but who can benefit from some non-formal education. At this stage, teaching is of a practical nature though there are basic subjects. May I draw your attention to the arrows in the diagram which indicate a criss-cross from the formal to the non-formal programme.

Participant: Would those over 35 years be allowed to participate in community practicums?

Speaker: Yes.

Participant: Please elaborate on Alternative Strategy III. Are there provisions for pre-school education?
Is it difficult to get children to go to school?
Are the teaching materials different for older children?

Speaker: As resources are limited, it is not possible to have provisions for pre-school education. Regarding the second question, all children want to go to school. The materials are valid for both younger and older children as there are two separate programmes.

Participant: What are the criteria for the selection of children going on to higher levels?

Speaker: School records, achievement tests and aptitude tests are used. This is very competitive.

Though exams can be abolished at the lower primary levels, entrance exams are still a problem. Exams are a necessary evil which should be ingrained into the programme. The school has to cater to two purposes: firstly, to provide the core subjects which will enable some children to go on to the next level of education, and secondly, to provide useful knowledge and skills for the large majority.

Participant: Though exams are useful, it would be worthwhile to find out if National Education Boards should really be assigned the task of constructing and administering tests for the purpose of assessing pupil performance. Considering that conditions, needs and problems in the different parts of a country differ widely, oftentimes, National Education Boards should be paying more attention to the development in teachers of competencies in test construction and interpretation of results. Performance in class as indicated by test results does not constitute an adequate basis for evaluating the achievement of the child.

Speaker: I agree, but I think that no educational system can operate without some form of evaluation, and that, in developing countries, children will not be able to move on to the top without there being some cut-off point. Provision should be made for those who were thus cut-off.

Regarding the development of educational technology in Ethiopia, we have been experimenting with both radio and television. As Ethiopia is mountainous in terrain, radio has more possibilities.

Programmes of in-service training for teachers and primary and secondary enrichment have been provided. Experiments have also been carried out, thought not conclusively, in using radio for teaching literacy. Through UNICEF assistance, three to five thousand radio sets have been distributed to schools. Television, though superior to radio in that it visualizes learning has been found to be too expensive.

Participant: What is the background to the radical changes in the Ethiopian educational system?

Speaker: Ethiopia has a population of 25 million with only 20% of the children of school-going age in schools. Hence there is the immense task of providing education for 50% of its children. There is also adult education to be considered as we realise that a programme of formal education alone is not adequate.

Participant: What is the reaction of teachers and parents to these changes?

Speaker: The problem is one of national magnitude, therefore we have to face it.

THE SYSTEMS APPROACH TO SATELLITE EDUCATION IN BRAZIL

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I - INTRODUCTION

It is generally acknowledged that Brazil's educational system is both quantitatively and qualitatively inadequate to meet the social and economic development requirements for the country as a whole in the 1970's.

Dependence on conventional processes of capital investment to expand the existing system is not only financially impossible, but could hardly be expected to place Brazil in a desirable position within the next ten years. The gravest aspects of the problem are:

(1) The protracted training period required to obtain good teachers, and

(2) The futility of attempting to extend the same quality of education to all parts of the country.

The solution proposed is not a complete one, nor can it be easily implemented. However, it is fully compatible with Brazil's economic and technological capacities. It might be regarded as almost the sole solution for developing nations of continental scale, such as Brazil.

The educational panorama in Brazil is even poorer than might be estimated from the data shown on Table I, since for the most part, the population is very young.

Starting from the assumption that the application of technological systems and processes in the educational field may - in less time and with less cost than the traditional system - solve some of the most serious educational problems existing in the country, the SACI Project was started to introduce advanced technological resources into the Brazilian educational system.

TABLE 1
(Latest Data Available)

Country	Estimated Population (millions of inhabitants)	Elementary, Vocational Teachers	Secondary and Education Pupils		Higher Education			Percentage of Illiterates over 14 years of age
			Total	Ob. I	Teachers	Pupils Total	Pupils Ob. I	
Brazil	85	440,000	11,246,000	132	28,000	142,000	2	40%
Argentina	22	217,000	3,138,000	142	14,000	216,000	10	8.6%
Japan	98	755,000	21,286,000	220	68,000	964,000	10	Ob. II
U.S.A.	198	2,024,000	59,703,000	250	326,000	4,265,000	22	2.4%
U.S.S.R.	231	2,571,000	49,926,000	216	206,000	3,608,000	16	1.5%

Ob. I: Rounded number of pupils per thousand inhabitants, based on the total population.

Ob. II: Figures unavailable.

Studies concerning the feasibility of such a project were started in 1967. One of them, the Rio Grande do Norte Educational Experiment (SACI / Segment 02) will utilize new educational resources via ground system and via satellite. It is located in Northeastern Brazil, where the differences existing in the environment represent the characteristics of almost all Brazilian regions. Therefore, it is an excellent area in which to locate an experiment for later extrapolation to a national system.

In as much as there are limitations in technical and economic resources, as well as time and personnel available, it is not possible to have all the various educational levels involved in this experiment. We established an operational plan which makes maximum use of the systems analysis approach in order to reach our objectives as directly as possible. The above chronogram covering all activities was designed as a Master plan at the beginning of the project.

The INPE program is on target, as indicated by our most recent Progress Report, February, 1973.

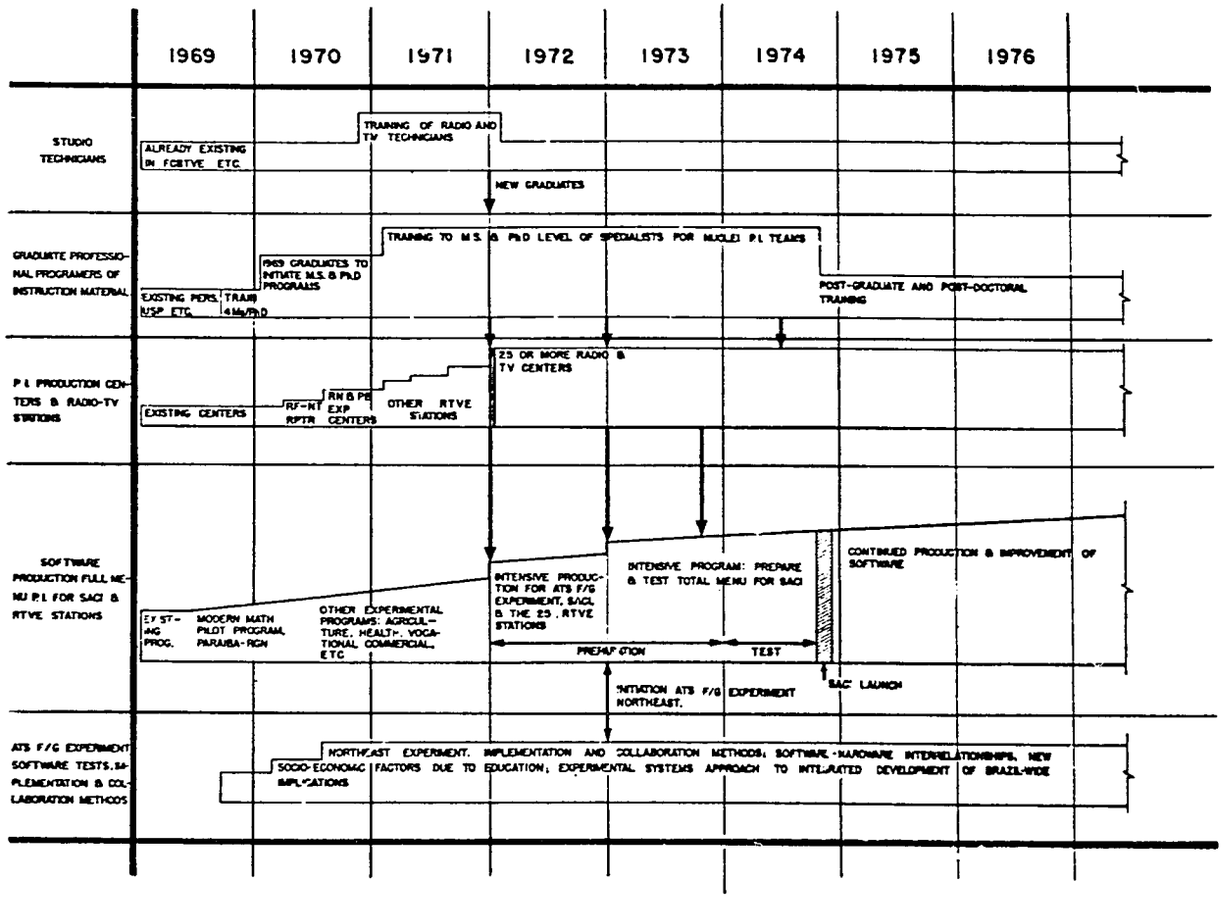

DIAGRAM OF SOFTWARE PRODUCTION ACTIVITIES

II - DESCRIPTION OF SACI PROJECT

In outline form, the following are essential components in our program:

Main targets:

1. Primary level - 1st 4 years
2. Qualifying primary teachers

Bottlenecks in current system:

1. High % drop-outs
2. High % of repeaters

Work Hypothesis:

1. Education technology approach presents better results in terms of student achievement than the traditional system.
2. Qualification of lay-teachers more cost/effective through technology than the traditional system.
3. Reach a greater number of primary school age population with greater efficiency than the traditional system.

Educational Objectives:

1. To test efficiency of educational program for 1st 4 years of primary using audio visual media including TV, radio and slow-scan.
2. Develop techniques for the production of TV programs for different subject areas, grade levels and evaluation techniques.
3. Train teachers in the utilization of audio visual media equipment and provide them with up-grading.
4. Offer better education opportunities to a considerable portion of school population.
5. Through formative evaluation, develop and improve school curriculum.
6. Analyze the results in terms of cost/benefits and cost/effectiveness, comparing them with data from the conventional system.

7. Verify the "degree of acceptance" of technology in the school system.

Chronogram of Activities

The experiment will cover the priorities already mentioned during the period of 4 years, 1972 - 1976.

The following presents a chronogram of the activities to be developed in Rio Grande do Norte.

The experiment will be carried out in eight phases or missions. During each mission, radio and TV will be used to transmit classes. Programs will be broadcast to about 500 schools spread out all over the state, which is about 400 by 250 kilometers. Broadcasting was initiated in 1972, utilizing three AM radio broadcasting stations, and one VHF TV broadcasting station, channel 5, with two retransmitting stations, also VHF channels (2 and 9). The experiment reaches about 3,000 teachers and 25,000 children. Of the 500 schools, 100 are in urban zones and 400 in rural zones.

Criteria for Delimitation of the Area of the Experiment

The geographical area to be involved encompasses 150 of Rio Grande do Norte countries, and contains 2,053 of the 3,439 public schools existing in the state. During the selection of these counties the following criteria were observed:

1. Involvement of the greatest concentration of counties within a geographical area.
2. Inclusion of both rural and urban population in the coastal area, the "agreste" and the "sertao".
3. Inclusion of the greatest number of SEEC centers.
4. Inclusion of the economic poles of the State to coincide with the study underway of economically viable communities
5. Availability of the greatest possible number of schools in order to select the best for experimentation and control.
6. Technical restrictions on the coverage of TV and radio signals.

PROJECT SACI - SEGMENT 02

EDUCATIONAL EXPERIMENT IN RIO GRANDE DO NORTE

CHRONOGRAM OF ACTIVITIES

MISSION I for TEACHERS	1. Supervisor and teacher training. 2. Up-grading course covering the first four grades, pedagogic notions and didactic notions.
MISSION II for STUDENTS	1. Material of 1st grade by TV. 2. Material of 2nd grade by radio.
MISSION III for TEACHERS	1. Supervisor and teacher training. 2. Up-grading course covering grades 5 through 8, pedagogic notions and didactic notions.
MISSION TV for STUDENTS	Material of first four grades.
MISSION V for TEACHERS	1. Supervisor and teacher training. 2. Up-grading course covering high school level for elementary teachers.
MISSION VI for STUDENTS	Material for first four grades.
MISSION VII for TEACHERS	1. Supervisor and teacher training. 2. Up-dating course for elementary teachers.
MISSION VIII for STUDENTS	Material for first four grades.

Criteria for Selection of Schools

In order to validate and generalize the results, the schools were chosen according to the following criteria:

1. All schools must belong to the public school system, state or municipal.
2. Inclusion of the 3 categories of public schools: "Grupo Escolar" (GE), "Escola Reunida" (ER) and "Escola Isolada" (EI) from rural and urban zones.*
3. Use of a random selection process for the 3 categories of schools.
4. A sampling which was not less than 25% of the school population of the Experiment area.

Since a primary objective is to test the effectiveness of technologies applied to education, it was necessary to make a comparative analysis between the technological system and the traditional.

The schools involved in the experiment were therefore divided into the following 3 groups:

1. Experiment Group (Exp. G) - composed of 500 schools chosen at random from among those already selected. All "lay" teachers must take part in the up-grading course. The students of both morning and afternoon shifts of these schools receive their classes through the technological system (TV and/or radio). This program started in December, 1972.

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* GE - A school with a separate classroom for each class, a teacher for each class, a principal, a secretary, etc.

ER - A school with several classrooms and teachers but without any administrative staff.

EI - A school with one room and one teacher.

2. Control Group I (CG-I) - composed of 50 schools chosen at random. These teachers take part in the training and in the up-grading course in accordance with the criterion established for the Experiment. Classes will be taught under the traditional system, however, and will not receive TV or radio.

3. Control Group II (CG-II) - composed of 50 schools also selected at random. Teachers and students will continue with the traditional system, and do not receive any of the benefits offered to Exp. G /CG-I.

Study of the Area Involved

In order to adapt the proposed technology system to the real needs of the region, and to obtain the support of the communities involved, our research embraced the following 4 types of surveys:

1. Teacher characteristics - to obtain detail information on their needs, values, areas of interest, educational background, professional experience and personal aspirations, involving the 3 categories of elementary teachers existing in the public school system.

2. Student characteristics - to obtain information on their needs, values, learning difficulties and personal aspiration.

3. School characteristics - to obtain information concerning location, administrative dependence, category, construction type, installations, quantity and quality of permanent school material.

4. Community leadership - to identify the communities leadership in order to get their support for the Experiment, considering that the participation of people and/or community agencies which exert influence on the community is of vital importance when introducing a technological innovation in the education field.

The characteristics of teachers and students were determined by means of a representative sampling method. The survey of the characteristics of the schools covered the universe of schools involved. The community leaders were identify by a crisscrossing study of the opinions collected in a questionnaire applied to each county.

The data-collecting tool utilized has been the questionnaire ofdirected answers which makes easy the interpretation and the statistical analysis. After the electronic processing of the data an analysis was performed and a report of the results presented the conclusions reached.

Operational Structure

In developing the experiment, the existing organizations in the area were used as fully as possible, as represented in Tables 4-5.

Observations

1. Ministerial, state and county agencies are providing material and technical assistance to INPE, according to their specializations.
2. INPE is in charge of the coordination of the experiment.
3. Local working groups comprise the following:
   - Training team: which prepared supervisors and teachers to carry out their functions.
   - Transmission team
   - Logistic team: for transportation, communication and maintenance.
4. System A of supervision includes state and municipal supervisors who were selected by the Secretariat of Educatioa and Culture of Rio Grande do Norte. Their principal function is to supervise and assess the teachers participating in the up-grading course.
5. System B of supervision includes approximately 10% of the total of the schools in the Experiment and includes personnel from INPE and SEEC/RN. The objective of this system is to obtain more systematic data on the program.

The following page contains a chronogram of training and courses for the total period of the Experiment.

	ADOPTED ABBREVIATURES
MC	Ministry of Communications
MEC	Ministry of Education and Culture
DEF	Department of Fundamental Training
PRONTEL	National Program for Teleducation
INEP	National Institute of Pedagogical Studies
CNPq	National Research Council
INPE	Institute of Space Research
MPCG	Ministry of Planning and General Coordination
IPEA	Institute of Applied Social/Economical Research
SEEC	State Secretariat of Education and Culture
UFRN	Federal University of Rio Grande do Norte

TABLE 4

Organzational structure of Segment 02

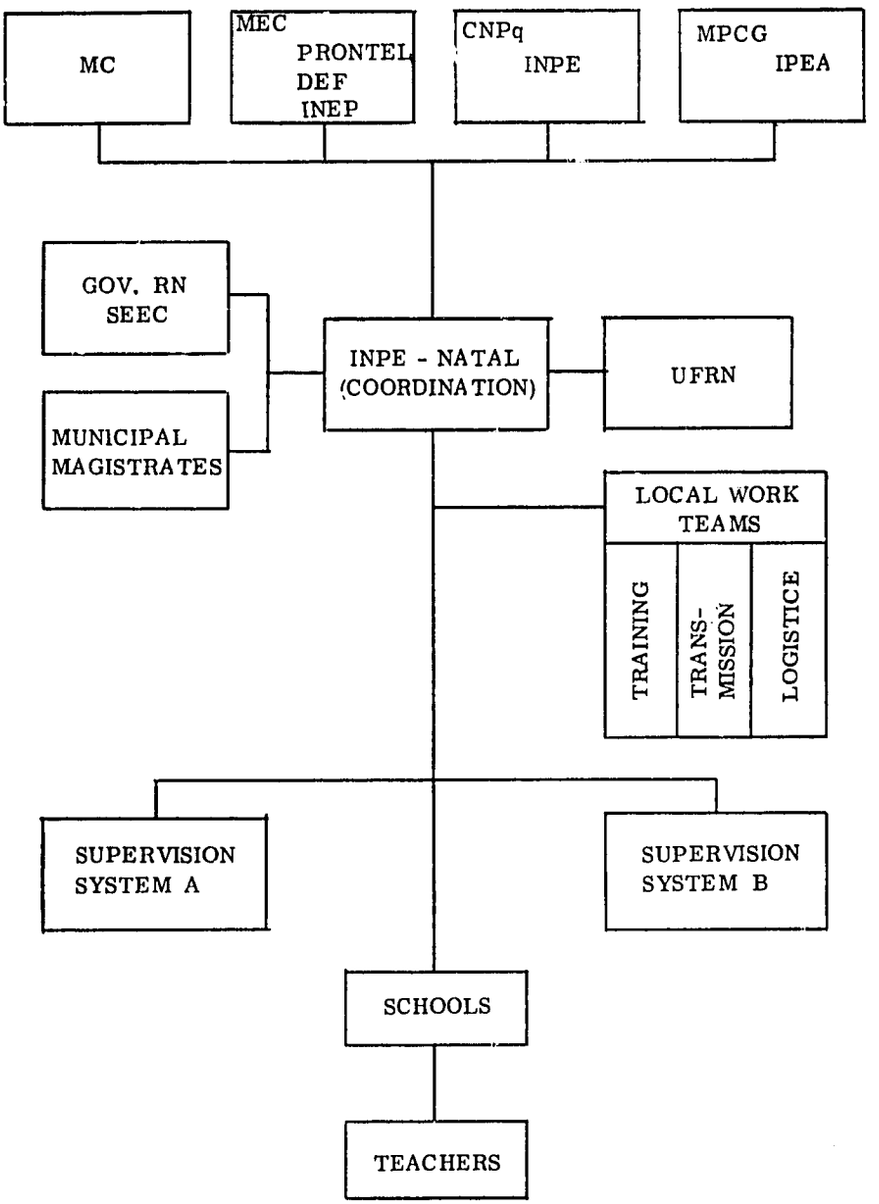


TABLE 5

Audio Visual Aids and Forms of Utilization

To meet the objectives of the experiment, we utilize the following technological resources:

Television - TV - via ground system and satellite

Radio - Ra - via ground system and satellite

Slow-Scan - (SS) - via satellite

Fac-Simile (FS) -- via satellite

In order to optimize the future use of these media on a national scale, several alternatives are being tested during the SACI Experiment stressing pedagogical activities and the technical restrictions of engineering.

Instruction for the First 4 Grades of Primary School

Radio

During the experiment two different radio formats will be used: simple or conventional (Ra), and programmed instruction (RP).

Conventional Radio

The conventional radio format will be utilized for transmission of 10 minute classes in the basic disciplines of the curriculum via ground system in 1973 and via satellite in 1975 and 1976.

Accompanying material will be used to provide the visual aspects necessary during the radio class, and during the exploration period after the reception.

For the transmission, one voice channel will be utilized (via ground system and satellite).

Radio will be tested in isolation and in combination with television.

Programmed Radio

This is an experimental project in programmed radio. Its application in the Rio Grande do Norte project will depend on the results of the tests now taking place in our laboratories.

CHRONOGRAM OF TRAINING AND COURSES (FORECAST)

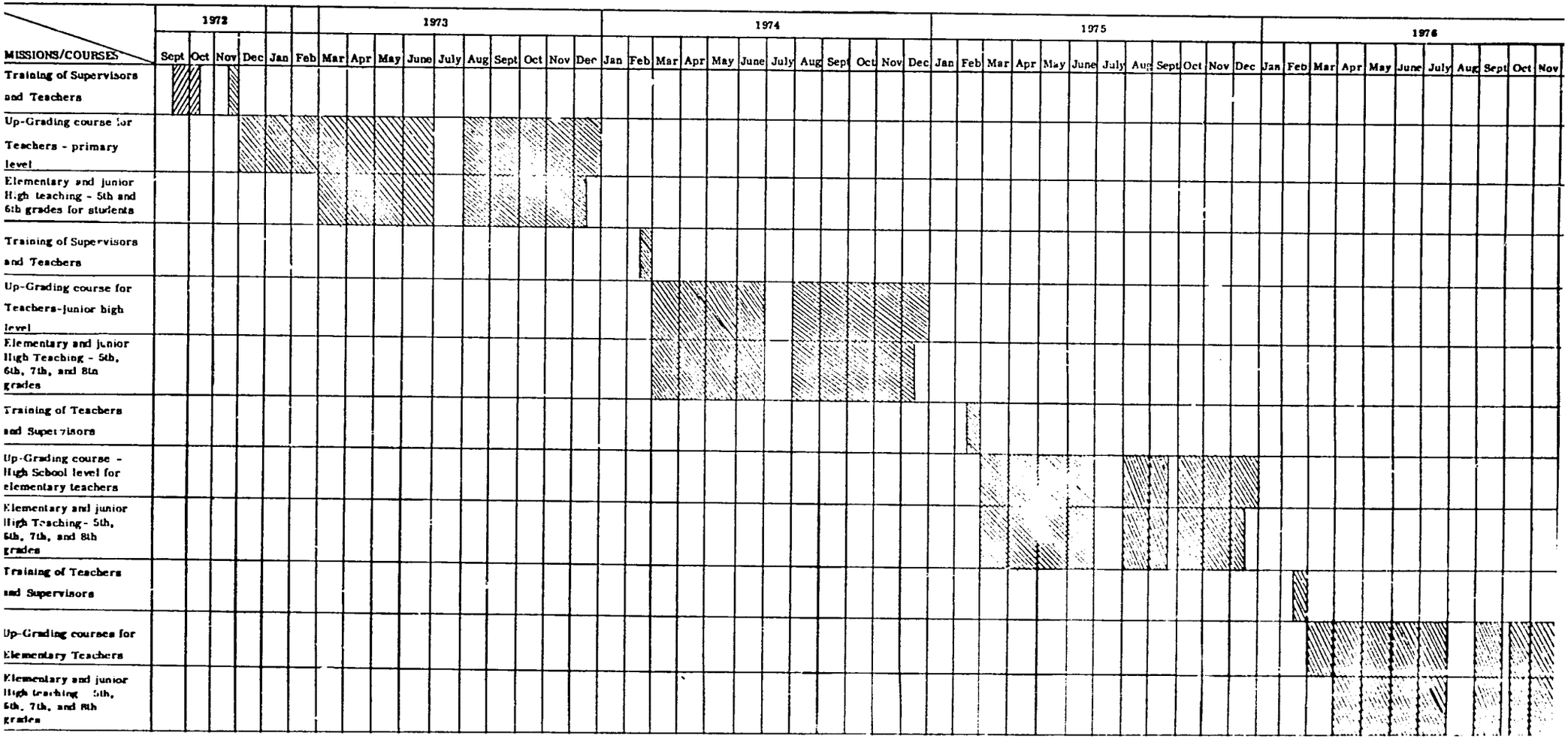


TABLE 6

Television

Television classes will also be 10-15 minutes in duration in the basic disciplines of the official curriculum, via ground system in 1973 and 1974 and via satellite in 1975 and 1976.

Television will be utilized in isolation, with conventional radio and with programmed radio via satellite.

For transmission of these classes, one channel of TV will be available, via ground system and via satellite.

Slow-Scan

The potential of slow scan to education programming has been recognized for some time.

The advantage of slow scan is the narrow band width of the signal necessary for communication, and the possibility of utilizing telephone channels for the transmission of the images.

The slow scan that we use presently with the ATS-3 satellite is characterized by the transmission of static images.

Slow scan will be utilized only in 1975, via satellite, for the transmission of 10 minute classes in the basic disciplines. This utilization will probably be restricted to 10 schools of the G Experiment.

Distribution of Media

After testing the various systems of transmission/reception in isolation and in combination, the methods to be used in the experiment will be distributed according to the following diagram.

In 1973 and 1974, we will have two sub-groups of radio and two of TV. In 1975, with the utilization of more technological resources via satellite, we will have sub-groups in almost identical proportions.

Class Schedules

The class schedules are appropriate for all of the sub-groups of Ra, TV, TV and Ra and SS.

The model was prepared for a classroom schedule with two shifts.

1st shift - 07:00 to 11:00 hrs.

2nd shift - 13:00 to 17:00 hrs.

DISTRIBUTION OF AUDIO VISUAL MEDIA
PROJECT SACI

Sub-Groups	No. of Schools	%	Sub-Groups	No. of Schools	%	Sub-Groups	No. of Schools	%	Sub-Groups	No. of Schools	%
Ra	100	20	Ra	100	20	Ra	100	20	Ra	100	20
Ra	100	20	Ra	100	20	RP	100	20	RP	100	20
TV	100	20	TV	100	20	TV	100	20	TV	100	20
TV	100	20	TV	100	20	TV+RP	95	19	TV+RP	95	19
						SS	10	2	SS	10	2
TV+Ra	100	20	TV+Ra	100	20	TV+Ra	95	19	TV+Ra	95	19
OTAL	500	100	-	500	100	-	500	100	-	500	100

TABLE 7

Activities: a period of 10 minutes for the student to enter class, for attendance, and delivery of the material for the classes.

Preparation for the class: period of five minutes before the reception of each program.

Reception of the Program: period of 10 minutes for each program.

1st Exploration: periods of 25 minutes for Portuguese language, and mathematics and 20 minutes for the other disciplines, immediately after the reception of each program.

Intervalo: physical education.

2nd Exploration: a period of one hour and forty minutes for additional review and exercises concerning the subject under study.

Configuration of the Classrooms

The necessity of turning the head in the direction of the television set makes one tired. A simple way of eliminating this problem is to arrange all the seats facing the direction of the television, as shown in Figure 1.

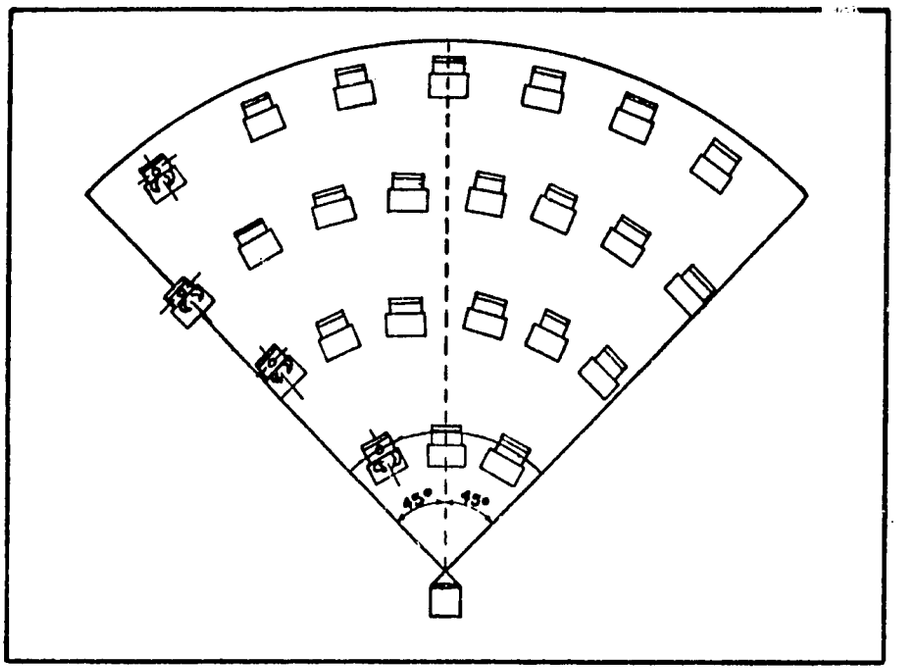
System of Evaluation

In the evaluation system of Project SACI, we use two types of evaluation (1) formative, consisting of a detailed analysis of the results obtained in each unit of the program cycle and (2) summative, consisting of the measurement of the system through its global results.

The evaluation of the educational experiment in Rio Grande do Norte constitutes an essential part of Project SACI, and therefore is being carried out with all the scientific rigor possible. The data is handled with maximum precision and independence in order to present an impartial judgement. Preliminary data will be available late February 1973, during the yearly progress review meeting.

Methods and Procedures of Evaluation

In order to reach our educational objectives, a sampling of 30% of the population of the schools in the area of the Experiment was used, about 500 of the 2,053 public primary schools. These schools were selected at random, observing the existing proportion between the three categories of schools: Grupo Escolar, Escola Reunida and Escola Isolada.



The problem in a normal classroom (below) of having to move the head in the direction of the television can be overcome with the above seating solution.

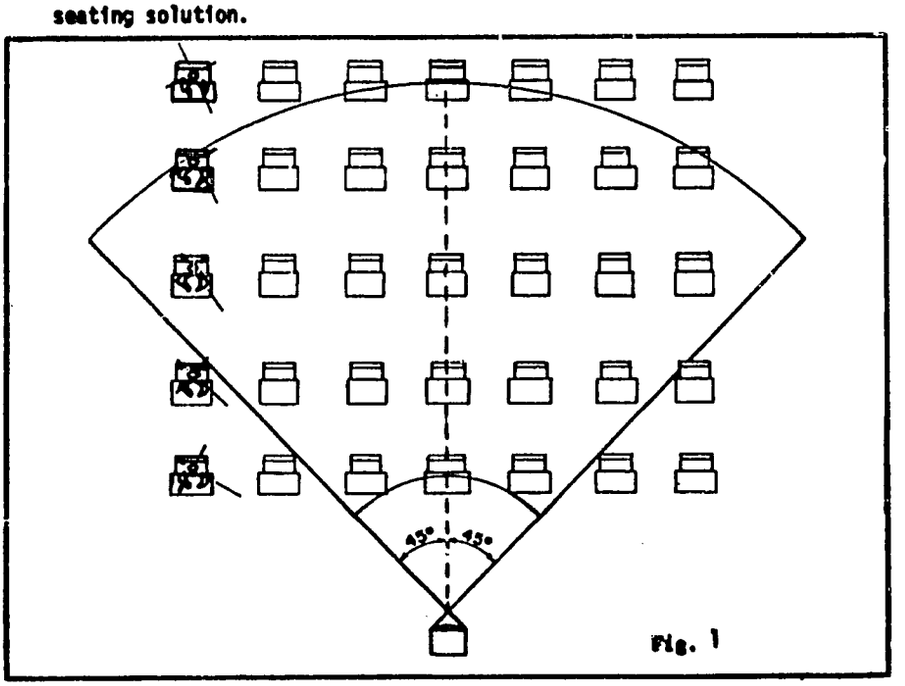


Fig. 1

In 1973 and 1974 we will have two sub-groups with TV and 2 with radio so that in 1975 with the use of the satellite and other technology resources we will have sub-groups of each type of school in almost identical proportions.

SCHOOLS IN THE AREA OF THE EDUCATIONAL EXPERIMENT IN RIO GRANDE DO NORTE

CATEGORIES	TOTAL	
	NO	%
Grupo Escolar	65	11.0
Escola Reunida	58	9.0
Escola Isolada	477	79.0

	NO	%
General	600	29.0

TABLE 8

DISTRIBUTION OF SCHOOLS INVOLVED IN THE EDUCATIONAL EXPERIMENT IN RIO GRANDE DO NORTE

GROUPS	NO. OF SCHOOLS
Experimental	500
Control I	50
Control II	50
TOTAL	600

TABLE 9

Studio in Natal

The studios in Sao Jose dos Campos are producing 3 - 4 TV and 5 - 10 radio programs daily. Our TV studio at the area of experimentation (Natal) will soon be operational in order to help with the production of the classes for the 1st grade students.

III - THE SYSTEMS ANALYSIS APPROACH TO SACI

In order to reach its objectives as efficiently as possible, INPE utilizes the systems approach in planning implementation, training and evaluation for the SACI Project

Each of the 8 missions is divided into 6 phases:

1. Planning
2. Development
3. Production
4. Pre-operation
5. Operation
6. Evaluation

These activities are carried out by highly specialized groups:

PROJECT SACI

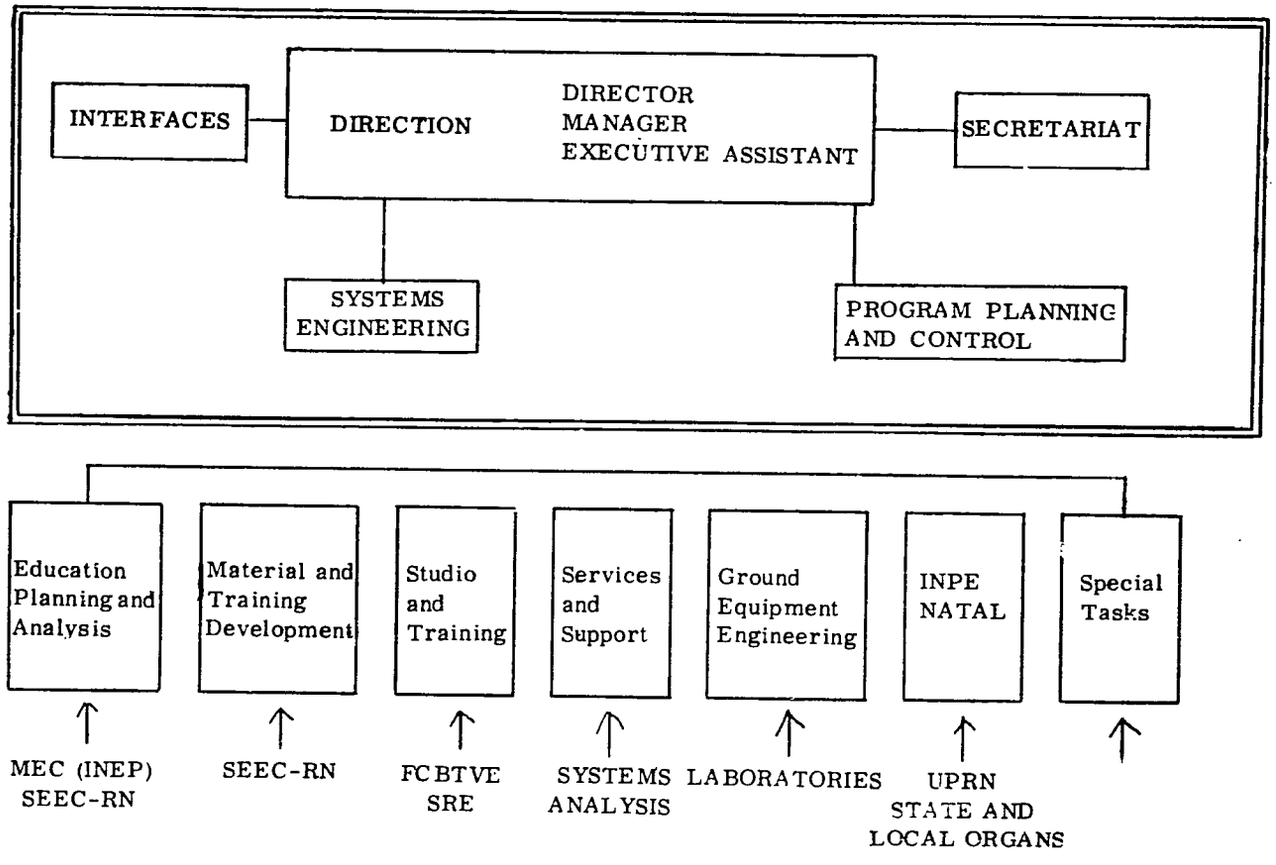


TABLE 10

1. Educational planning and analysis
2. Development of material and training
3. Studio and training
4. Engineering and ground equipment
5. Service and assistance
6. INPE NATAL
7. Special assignments

IV NATIONAL SATELLITE PROGRAM

Project SACI is composed of three segments:

Segment 01 - Experiment ATS-3

Segment 02 - Educational Experiment of Rio Grande do Norte.

Segment 03 - National Coverage System

Segment 01 - Experiment ATS-3

This phase linked INPE with Stanford University (U.S.A.) through the ATS-3 satellite. Three kinds of tests have already been made in our experiments utilizing part of the time of the satellite ATS-III:

Transmission of simplex voice channels between INPE and Stanford University and Mojave Space Center, in the U.S.

Transmission of video signals compressed to a bandwidth of 0.5 KHz, using slow scan equipment, from INPE to Stanford University and back to INPE. (120 sec for 1 image).

Transmission of documents scanned by a xerox telecopier equipment. An electrocardiogram taken from a man with heart problems was sent from INPE to Seattle, via ATS-3, which was located between Colombia and the Equator (71^{O}W). The electrocardiogram was then immediately sent from Seattle to the University of Alaska, via the satellite ATS-1, which was located on the Pacific Ocean (150^{O}W). The information received at the University of Alaska, after recorded on a special paper in the telecopier, was transmitted back to Seattle via ATS-2, and then

retransmitted to INPE via ATS-3. We had, in this case, a link with four hops.

Only one antenna was used at INPE: a four helix array. Our up-link frequency is 149.22 MHz, and our down-link frequency is 135.6 MHz.

This experiment will become routine by the beginning of the year.

Segment 02 - Educational Experiment of Rio Grande do Norte

INPE originally planned to use the ATS-F NASA satellite as per description below, but now also plans to use its own domestic satellite in 1976. Meanwhile an effective ground system using radio, TV and slow scan is being established in Rio Grande do Norte.

One year ago, in December 1971, INPE submitted to NASA a supplement to the May 1970 proposal, proposing participation in the experiments to be held with the ATS-F satellite.

The first proposal, dated May 1970, was related to the UHF transponders, in 850 MHz. The last one, of December 1971, takes into account now, the utilization of the 2.5 GHz transponders on the ATS-F.

The 10 meter dish, at the satellite, will produce a 0.9 degree half-power beamwidth. The state of Rio Grande do Norte, and also a great part of Northeast region is covered.

An FM receiver is being designed at INPE, tuned to one of the ATS-F transponders carrier frequencies at 2569.2 MHz.

The design philosophy is based upon the study and development made at Stanford University.

The antenna is a 2.14 meters (7 ft.) paraboloid, and the Schottky diode balanced mixer, the local oscillator and the IF pre-amplifier are antenna mounted.

A cable having up to 5 dB losses is used to connect the antenna mounted part to the rest of the receiver.

At the output of the IF filter, the half-power bandwidth is equ 1 to 33 MHz. The output of the receiver presents a baseband with 5.3 MHz and 2 V p-p.

The total system noise figure is about 6.0 dB, which corresponds to an effective noise temperature of 960°K, taking into account about 100°K for the antenna temperature.

The tests are now being performed and the next step is to develop a mass producible receiver, in conjunction with national industries.

Segment 03 - National Coverage System

This refers to diffusion of education and information throughout the country by means of a national satellite. These activities will be directly related to the results of the experiment in Rio Grande do Norte, and will in fact be an extrapolation of the INPE experiment to the Northeast.

A distribution satellite for countrywide coverage can be built and put into orbit in less time than microwave links can be set up all over Brazil.

The saving in time and money is crucial to a developing country, because of present explosive evolution in advanced countries.

Sparsely settled, the vast interior of Brazil presents terrestrial links, not only serious installation and operational difficulties, but also costs that steeply increase with distance.

Satellite costs and difficulties are independent of distances, having practically uniform long-distance rates, because any two stations are always some 73,000 km apart.

The Brazilian Government set up in June 1972, a high level commission, formed by the key personnel of Brazilian agencies interested and related to the Domestic System, to analyze the general concepts of such a system, along lines proposed by INPE in 1967.

A first satellite should be launched in the geostationary satellite orbit about 1976. Its probable configuration will encompass one TV channel, with educational purposes, in 2.5 GHz band allocated to the Broadcasting Satellite Service in WARC, and a large number of telephony transponders, for telecommunication purposes, in the 6-4 GHz band.

Its probable location, taking into account several criteria, is from about 72 to about 83 degrees west longtitude.

Summing up, the advantages of satellite communications for Brazil are:

1. Augments national telecommunication network
   a. Cost benefits for long distance
   b. Facility diversity for service restoration
   c. Rapid response to unanticipated traffic
   d. Instantaneous network for National Television Broadcast.
2. Provides unique services
   a. Television for remote areas
   b. Telephony to isolated communities
   c. Low cost instructional television distribution
   d. National security communication network.

A satellite system is the least costly of the means of reaching any point within the country, such as the frontier villages. In certain cases, it is the sole means of communicating very confidential matters. This method involves the shortest installation period required by any nation-wide communications system. In addition, that portion of the satellite used for communications purposes could well provide a reasonable source of income.

The following (graphics) are illustrative of Brazil's plans for a domestic satellite to be used for educational programs.

LAUNCH VEHICLE	
TYPE	NASA Thor Delta 2914
PAYLOAD	700 Kg

TABLE 11

BRAZIL SATELLITE SYSTEM

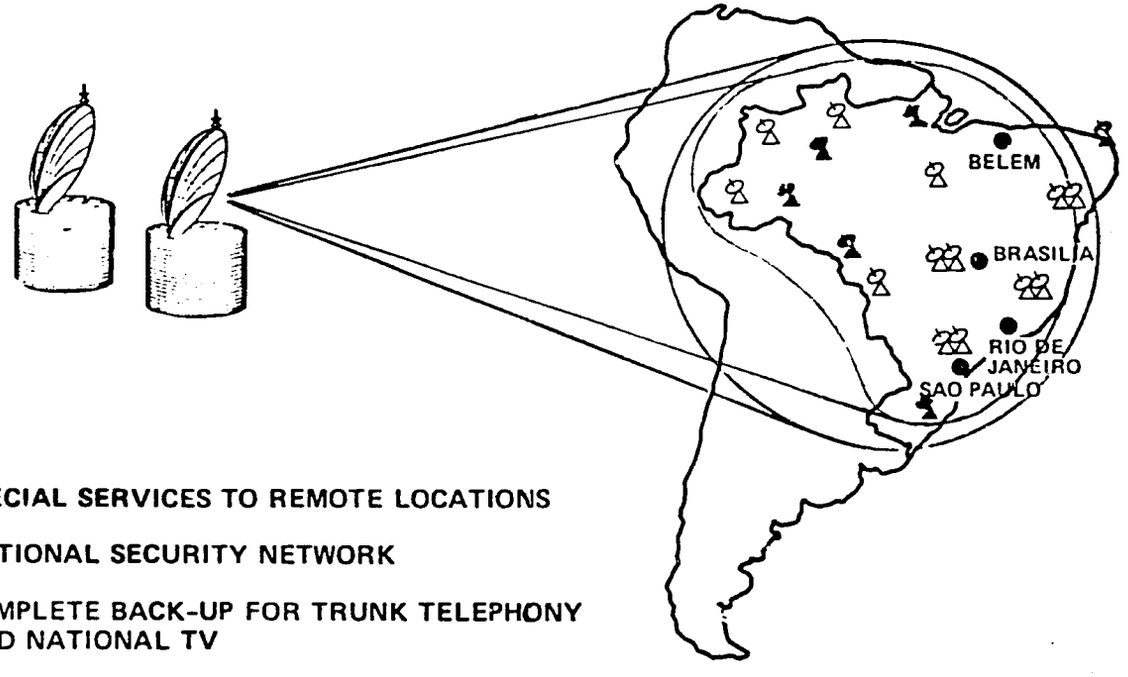


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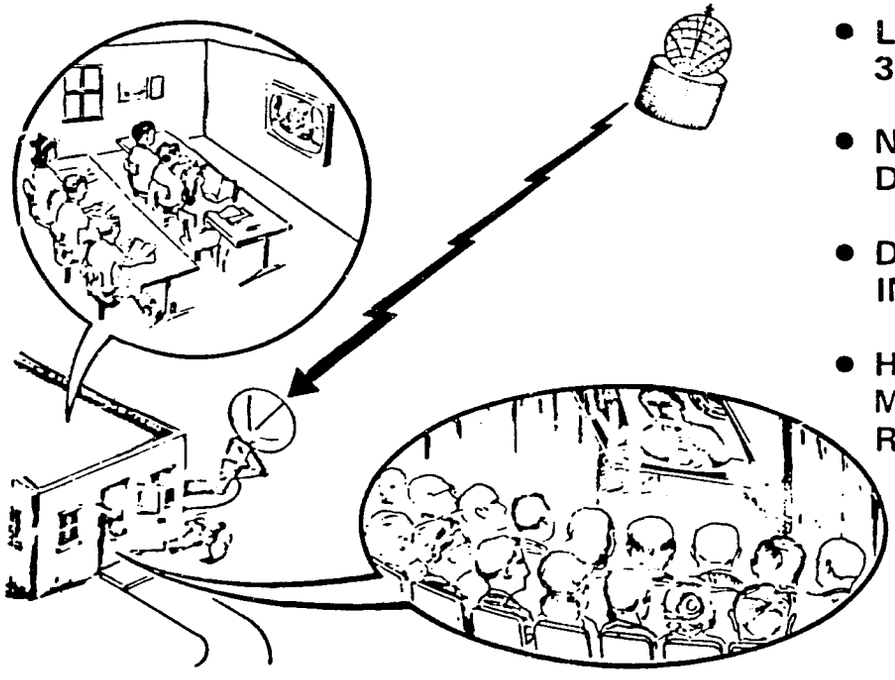
FIGURE 2

COMMUNITY AND INSTRUCTIONAL TELEVISION

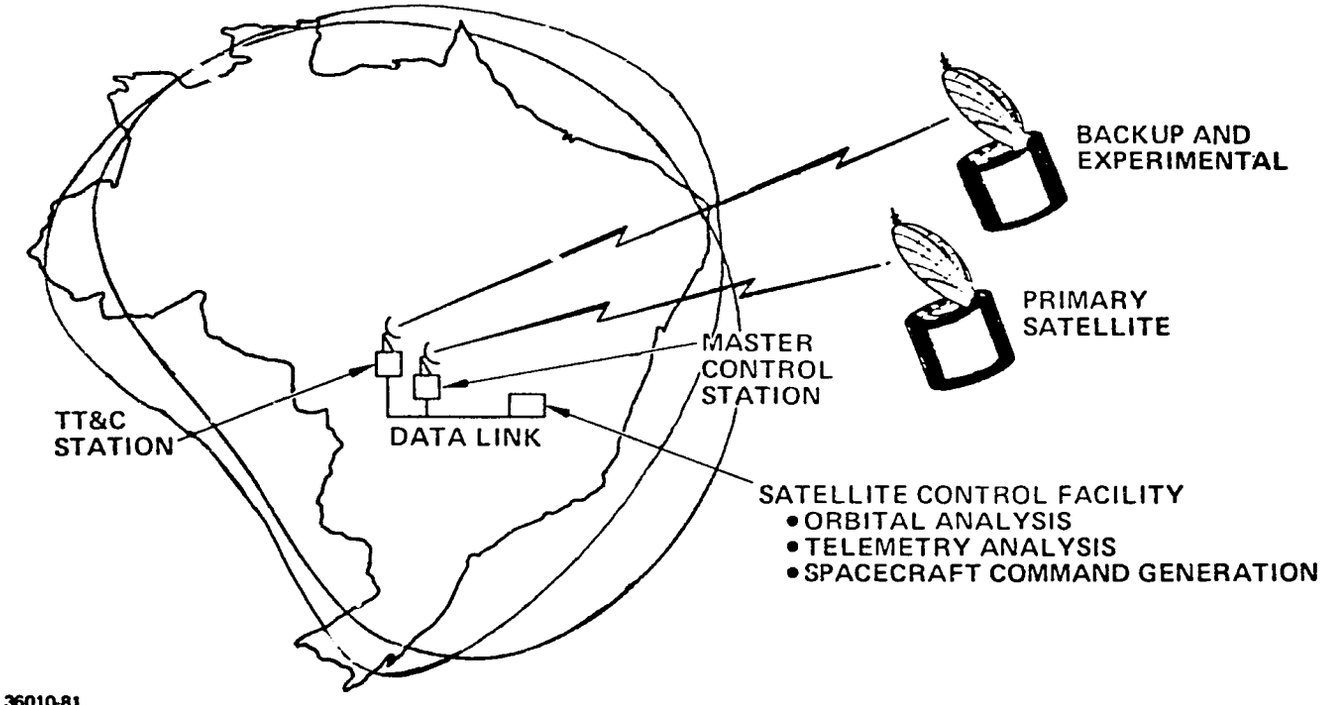


- LOW COST 2.5 GHz 3 METER TERMINALS
- NATIONAL TV DISTRIBUTION
- DEVELOPING INSTRUCTIONAL TV
- HIGH RELIABILITY– MINIMAL MAINTENANCE REQUIREMENTS

36010-73

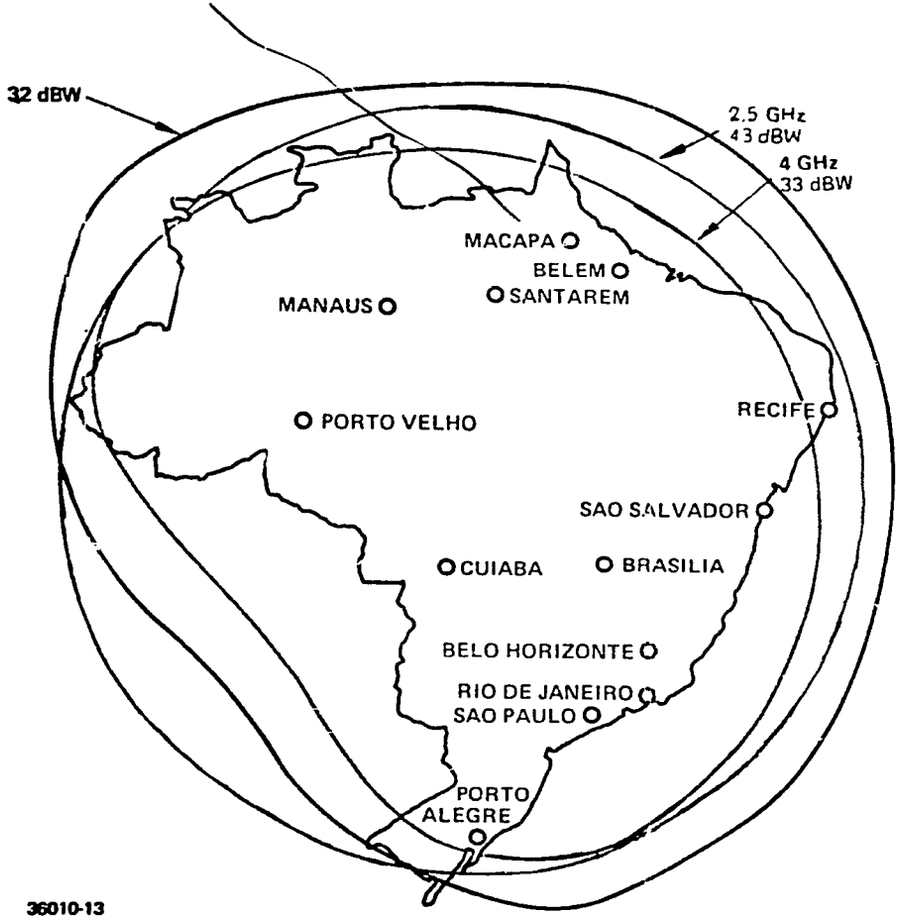
FIGURE 3

IN-ORBIT OPERATIONS



36010-81

FIGURE 5



36010-13

FIGURE 4

ANTENNA COVERAGE PATTERN

V - FUTURE DIRECTIONS

Future activities at INPE will focus on extending the Rio Grande do Norte Educational Experiment by 10%, into the neighboring states of the Northeast, such as Ceara and Paraiba. By 1976 this modern, validated instructional system will be broadcast via ground system and satellite to some 24.0 million students in primary schools in order to attain one of Brazil's most highly prized goals: universal education.

Training

The next years will be decisive in establishing Brazil among the nations developing scientific activities linked to space.

It is obvious that the scientific and technological aspects of Brazil's space problems will only be resolved when it has a significant corps of scientists in terms of quality and quantity.

It is urgent that a group of high-level scientists, capable of administering projects, directing laboratories and orienting engineers, be selected and trained as a first step for the formation of a Masters' degree program. Given the lack of Brazilian educational centers to develop these students, INPE is concentrating all its resources in order to build up the potential for good engineers, physicists, meteorologists, economists, geologists, sociologists, physchologists, educators and administrators.

Our Post-Graduate Program envisages granting Masters and Doctoral degrees in these essential areas. The structure of this program conforms with the directives for granting graduate degrees established by the Federal Council of the Federal Ministry of Education and Culture.

At present we are offering graduate degrees in the following areas:

1. Systems Analysis and Applications
2. Space and Atmospheric Science
3. Electronics and Telecommunications
4. Computer Science
5. Remote Sensor Applications
6. Technology of Education

The newest program is Technology of Education Its introduction to the curriculum is essential because of INPE's responsibilities in developing a national education program by satellite.

Educational Technology is defined broadly as the systems engineering approach to designing, implementing, and evaluating learning systems.

All graduates of the program will be proficient in the areas of: educational research, measurements, statistics, experimental design, educational psychology in systems analysis, and communications media.

The program is primarily designed to equip students to manage or participate in educational technology programs where they will carry out educational research and development activities in international settings, public school systems, the community, government or military agencies and in private industry.

A student's program may include courses in other departments of the Institute as well, in order to achieve an inter-disciplinary approach.

Requirements for the degree include demonstrated mastery of the concentration areas through practical application of learned skills and performance testing.

The program concentrations will be Instructional Systems Development and Educational Research and Evaluation.

The concentration programs include:

1. Basic and applied research methodology
2. Statistic and experimental design
3. Education test development
4. Human learning
5. Development and use of technology in education
6. Computer applications
7. A behavioral approach to instructional design
8. An anaiysis of variables in the learning environment.

A second phase of the program will be the design of validated course notes for presentation through media and programmed instruction format, in order to provide independent study programs at INPE and other regions of Brazil.

We are also planning to invite a representative number of students from all regions of Brazil as well as from other countries to participate in our graduate program next year. Scholarships will be provided for this unique work/study program.

Dr. Fernando de Mendonca, General Director of INPE, would like to take this opportunity to invite two students to be nominated by SEAMEO to study and work with us next year in our graduate program, and in exchange we would plan to send two Brazilians to Innotech. We believe such an exchange of ideas, and experience, a sharing of skills and resources would be equally stimulating and advantageous to our people and to yours.

I would like to thank you very much for the opportunity to present the current status of Brazilian efforts to develop a viable system of satellite education.

We are greatly interested in the development of innovative programs in the SEAMEO conference countries,and hope this will be the beginning of a fruitful sharing of information.

Discussion Summary of Dr. Cusack's Paper

Participant: Are there may be possible "halo" effects of TV? Could you tell us how much saving there can be, in economic terms, in introducing this system as compared to the provision of teachers in the conventional way?

How can Southeast Asia nations apply this method?

Speaker: Comparative costs will only be known at a later date. I would rather not answer the second question.

Participant: What are the projected costs of the domestic satellite system?

Speaker: At the moment we are receiving bids, but the cost of software will be available from the General Director of INPE and enquiries may be directed to him.

Participant: Would one channel be adequate to cover six grades?

Speaker: In itself the satellite is primarily a communications station. One TV channel is available in the beginning of the project, but more will be available later on.

Participant: Are TV sets provided free to schools, and how are they serviced and maintained?

Speaker: TV sets have been supplied free to schools in the experiment. They are being serviced by regional service teams. All classrooms in the experimental schools have at least one TV set, and broadcasts will begin in March.

Participant: Do you think satellite education can provide for individualization?

Speaker: The media will give teachers more time for individual instruction.

As for the teacher retraining programme, teachers have been retrained through seminars. Instruction have been given in the same areas in which they would be teaching the children. The teacher re-training programme is in the process of being evaluated.

Participant: Can TV or radio replace teachers?

Speaker: To a great extent there may be the choice of a new delivery system - not as many teachers may be needed, or there may be a higher student-teacher ratio. Again, assistance from the community of volunteers may be used.

Participant: In a situation where financial resources are limited, can TV expand educational opportunities?

Speaker: Yes, it can. The same media can reach parents and some of the messages, or the rationale for these messages can be conveyed to parents.

With regard to cost, one should consider the cost-effectiveness as well as the cost benefit ratio.

If you consider technology as an aid, this would increase costs. Hardware is not a cure for educational problems. Rather it is necessary to consider other ways of designing the system to use it more cheaply and effectively.

Participant: What is being done to link printed materials with technology and what is being done about the development of research techniques?

Speaker: Programmed instruction and new curriculum materials are being developed. Pre-testing has just been completed using control groups. Another experiment has been started to identify communities which have made the best use of resources, etcetera, with a view to studying if these techniques can be transplanted to other communities.

Hardware will be ready in 1975, and in 1976 transmission of ETV programmes will begin.

Participant: Has any thought been given to the use of VTR cassettes?

Speaker: No. The satellite is used for commercial communications.

Participant: The use of TV is not a delivery system which can replace the present system, but it can perhaps decrease wastage and make education more effective.

PROGRAMED TEACHING BY NON-PROEESSIONALS FROM A RURAL COMMUNITY

by Dr. Douglas G. Ellson
INNOTECH
Singapore

This is a progress report on INNOTECH's Programed Teaching Project, an experiment being carried out in a rural area of Malaysia to test the feasibility of using the technique of programed teaching to enable members of the local community with minimum education to teach beginning reading. The problem which led to this experiment was well stated in Dr. Kaw's paper. First, he said that the problem is to improve or at least maintain effectiveness and quality within a severely restricted budget. To quote "in other words, we should exercise optimum use of the minimum funds with the best possible outcomes." Dr. Simpson also emphasized the economic limits within which any delivery system in Southeast Asia must operate. A statement of the problem which also suggests a solution to it has been given by two economists:* "The basic problem, then, is to find new technologies of primary education which can be utilized effectively by low-paid, poorly educated and unqualified teachers." This is quite compatible with Dr. Kaw's suggestions. Dr. Kaw goes on to outline three areas where greater efficiency must be sought, in: 1) physical facilities, 2) management practices and 3) use of teachers' time. This experiment involves the last two: it is concerned with better management of the time of professional teachers. It is desirable to use professionally trained teachers only where they are absolutely necessary (since their salaries constitute the largest item-70-90% of the educational budget) and to use less well trained personnel wherever it can be demonstrated that they can be substituted effectively.

Education is perhaps the only profession which does not delegate a major part of its professional work to technicians and para-professionals. Engineers and architects have their draftsmen, artists and carpenters.

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*F. H. Harbison and C. A. Myers, Education, Manpower and Economic Growth (New York: McGraw-Hill, 1964) p. 98.

Doctors have nurses and X-ray technicians. I would like to make a point that the technicians often do a better job in their own area of specialization than the professional himself. If I must have a shot I will let the doctor decide what is to be put into the hypodermic, but I much prefer to have the needle handled by a nurse. The doctor may know how, but the nurse has had much more practice and the result is less painful. We have evidence that the same thing can be true when sub-professionals are properly trained and used in the teaching profession.

In elaborating his point that the time of professional teachers must be used more effectively, Dr. Kaw mentioned the use of assistant teachers -- which would make it possible for one leading professional to handle several classrooms. He also suggested the use of monitors and this point was extended by the delegate from Ethiopia, who suggested the use of monitors at the receiving end in educational radio. Others from the local community who could assist the professional teachers were mentioned: volunteer teacher's aides and local experts who could make their special expertise and knowledge available to the schools.

A major problem in the use of such sub-professionals and para-professionals is their lack of training. To the extent that they are not trained, the responsibilities they can be given are limited.

A possible solution is programed teaching, which can function as a form of training. Programed teaching is a form of programed instruction which must be distinguished from programed learning: the latter is a self-instructional technique which does not use teachers. Instead, it uses mechanical and electronic substitutes such as teaching machines and programed textbooks. In programed teaching, it is the activities of a human teacher which are programed. The program is a very carefully designed method for teaching which integrates content (what is taught) and procedure, (how the teaching is done) and specifies the moment-to-moment activities of the teacher in great detail. The program is usually developed initially by a team of experts that includes subject matter specialists, trained teachers and specialists in the techniques of programed instruction. Once the program is designed it is tried out and revised, often in several cycles, before it is used as a training device and set of instructions.

The training of programed teachers differs from traditional teacher-training methods, which emphasize theory and general instruction in the handling of children. Rather than preparing teachers to develop their own teaching methods in a broad area, it tells them in detail exactly how to teach in a specific area. Programed teachers are not necessarily trained at all in the subject matter they reach-content may be carried by the teaching materials alone.

As sub-professionals with limited training, programed teachers are not qualified to make professional decisions on the basis of theory or general knowledge, but if the programs they follow are properly designed and they follow them exactly, they will teach the way a really good teacher would teach. There is a growing number of demonstrations that in certain areas a well-programed sub-professional can teach more effectively than the average professional teacher.

The technique of programed teaching has been used in a few subject matter areas in the United States and other developed countries. In many studies, objective evaluation has shown no significant difference between the results obtained by programed teachers-non-professionals-and those obtained by professional teachers. This is itself a significant finding. More interesting, however, in a few cases, most of them at the beginning primary level in reading and mathematics, very large differences have been found in favor of the programed teacher. The data showed that in meeting certain specified objectives, the programed teacher can be from two to fifteen times as effective as the professional teacher.

The present study is a small scale experiment to determine the feasibility of applying programed teaching under Asian conditions. It was designed to obtain answers to two questions. First: is it feasible to use programed teaching to train elementary school graduates from rural Asian communities to teach effectively? Second: how effectively can they teach? The technique could have been applied in any of several subject matter areas, ranging from reading to agricultural practice. But for a number of reasons, including the assumption that any curriculum, academic or practical, will include literacy training, beginning reading was chosen as the subject matter to be taught in the experiment.

The research was undertaken in Pontian, Johore, a rural area of Malaysia which could be conveniently reached from Singapore. It was carried out in ten elementary schools, two in the district center, the remaining eight in

a 25-mile string of villages on or near a paved road that passed through Pontian. To maximize the homogeniety of language background, Malay Stream schools were used. A sample of 100 children, 10 from each school, was selected to represent the lower half of the first grade as measured by teacher ratings and scores on a specially constructed reading readiness test. A matched control group was selected from the same classrooms using the same measures. The children were given the usual daily period of instruction in Bahasa Malaysia, which included reading, and an additional half hour of instruction in the same subject matter. During this half hour children in the experimental group were taught by the supplementary teachers trained through programed teaching; the control children and others in the classroom not included in either the control or the experimented groups were taught by the regular teacher.

The duration of the experimental teaching will be three months, including approximately 60 teaching days. The performance of all children in the participating classrooms will be evaluated at the end of the period by means of an achievement test designed to measure performance on material taught by the regular teacher as well as that taught by the supplementary (programed) teacher..

Five supplementary teachers and one supervisor were selected through interviews from 17 candidates nominated by the principals of the participating schools. All of the candidates were graduates of the local elementary schools, with no regular employment. The criteria used in the interviews were largely subjective, e.g. poise, maturity and speech, but, they also included age (18 to 35), experience with children, participation, in community activities and acceptability of a small sample of printing on a blackboard. Five of the candidates selected, including the supervisor, were women and one was a man. Two had some experience teaching in the local religious school with a minimum of training.

The teachers and supervisor were given eight hours of training before they began teaching, supplemented by an additional eight hours in the three following weeks. The supervision was also designed to have an on-the-job training function. Two of the five teachers were judged to be satisfactory after the first eight hours of training. The performance of the remainder was satisfactory by the end of 16 hours of training. Training was done by two Innotech interns from Malaysia who had also translated the program from English to Malay. They had studied the program carefully and were given approximately six hours of demonstration and training in which they

took the roles of both teacher and pupil. As interns they had previously heard lectures and taken part in discussions on the general nature of programed teaching and its use.

The results will provide answers to the two questions mentioned above. The first question, concerning the feasibility of using rural elementary school graduates as programed teachers, can be answered in the affirmative. Their performance was equal to that of the average programed teacher observed elsewhere and the performance of several was equal to the best. One indication of the quality of their work was obtained from a discussion which developed during a late training session, in which they questioned several aspects of the original program. Their suggestions showed a good understanding of the program and what they were doing as they followed it. These suggestions served as the basis for a major revision of the initial programs made during the third week of the experiment.

The second question, how well the supplementary teachers taught, can not be answered until later when performance tests are given to the participating children. A full report of this experiment will be completed about June 15, 1973 and issued as an Innotech Report.

Discussion Summary of Dr. Ellson's prper

Participant: Indonesia has tried to use elementary graduates with two years of training as teachers. People showed concern about the low quality of teachers. However, it seems to me that programmed teaching as prepared by INNOTECH requires less time, and yet the quality is higher.

Participant: What kind of method is used in teaching, reading and writing, and what kind of teachers are produced after twelve hours of training only? I think teaching is not only transmitting the subject matter to the child but it also requires understanding. Besides, some materials such as textbooks must still be provided.

Speaker: The method used is much like the method used in Malaysian regular classrooms, but there are no textbooks. The only teaching material is on the blackboard. An important change in the procedure of learning is that the pupils read print, rather than repeating what the teacher says. The programme tries to prevent memorizing. Mistakes are not punished, but children are praised when they do well.

Summary of the INNOTECH Programme:

INNOTECH has a structured three-month programme on educational planning, educational innovation and technology. As part of that programme, in its application, we had five teams of the 40 trainees who were at INNOTECH between October and December this past year, working on specific problems in the region. Each team consisted of 8 persons, one from each member country. They selected their own projects, and applied what we called the systems approach to these problems which meant going from the problem, looking at the constraints and resources that were available in solving them, developing objectives of what they want to achieve, measures of their achievements, searching for solutions including brainstorming for solutions, developing methods for implementing these solutions once they are chosen, including the techniques having to do with change agent behaviours, and planning and implementation of programmes.

The following is one solution that one of our regional teams came up with recently. Each regional team comprised one representative from each SEAMEO country. The problem of this group was how to provide an economical mass delivery of primary education in the face of limited resources and a high drop-out of 40%:

> "Using the systems approach our group suggested that the duration of formal elementary school be reduced from 6 to 3 years and that the remaining 3 years should consist of non-formal schooling.
>
> During the 3 years of formal schooling, the pupils would use a new curriculum based on acquisition of the basic skills of reading, writing and arithmetic. Materials on these 3 subjects will be integrated with Mathematics, Science and Social Studies basic learning requirements. We suggested a reduction of time spent at formal schooling in order not to increase extra expenditure on additional school buildings or teacher's salaries to cope with the expected increased elementary school intake (i.e. the 40% who would have dropped out under normal circumstances). Under our proposed solution the teachers who have hitherto been teaching grades 4-6 will now teach grades 1-3 only. Not all these teachers will be needed in spite of the fact that each elementary school will operate two sessions per day. The remaining, extra teachers thus released will form a pool of itinerant teachers for a second part of the programme, explained below.
>
> After the children have completed 3 years of elementary school we expect them to be sufficiently proficient in the 3R's to be able to make use of programmed texts as the main method of learning for the remaining three years of elementary school. They will have to be enrolled formally every opening of the school year, after which they will be orientated on the requirements they have to accomplish at certain periods within the school year. These grade 4-6 pupils will be guided by the pool of teachers mentioned previously. For example, assignments which are part of the regular assessment, will be marked by these teachers and these teachers are expected to be available at school

to provide guidance to any pupil in the non-formal schooling programme. The children in the non-formal schooling programme will be assisted by tutors in the persons of their parents, brothers, sisters, members of the community."

SOUTHEAST ASIA PRIMARY SCIENCE PROJECT (SEAPS) A REGIONAL COOPERATIVE VENTURE

by Mr. Chin Pin Seng
Director, RECSAM
Penang, MALAYSIA

The Regional Centre for Education in Science and Mathematics (RECSAM) is a sister institution of INNOTECH, established by the South-east Ministers of Education Organisation (SEAMEO), with the main objective of assisting member countries of the Organisation to improve the teaching of science and mathematics in their respective countries and to that end, to undertake research, leadership training programmes and other related activities that will complement and supplement existing national efforts in science and mathematics curricula reforms at primary and secondary levels.

National and regional workshops which were organized and held by RECSAM during the interim phase of the Centre, identified common needs and problems in curriculum reforms which can be solved through regional co-operative action and developed the first five-year plan of problem-oriented leadership training programmes and activities for key personnel from all member countries beginning July 1970.

Programmes implemented since 1968 include the holding of five regional conferences in various fields of science and mathematics education improvement, fourteen 2- or 3-week regional service courses and twenty-six 3-month leadership courses in modern curriculum development and methodology for primary and secondary sciences and mathematics.

Up to date, four hundred and ninety-five (495) key personnel in science and mathematics education from the region have attended RECSAM's courses. They included teacher educators, school inspectors and supervisors, head teachers, senior teachers, curriculum developers and organisers, and research and evaluation officers working in ministries, departments of education and faculties of education, and teacher colleges.

It is too early to expect the full impact of the "multiplier effect" of these numerous courses conducted by RECSAM on the national scene. But it cannot be disputed that those key personnel have become more receptive to new techniques in the teaching of science and mathematics and to innovative ideas in science and mathematics curriculum reform. It is encouraging to learn from the feedback of such participants that increasing use of them has been made by their ministries in curriculum renewal.

But the time has arrived for RECSAM to play a more effective regional role in its efforts to accelerate the pace of curriculum developement in member countries by embarking on a pilot scheme to develop and produce a prototype "Southeast Asia Primary Science Project" (SEAPS) by making full use of several related courses and involving the participants in the development and production of suitable and relevant teaching and learning materials for the region.

The 1972 Report of the International Clearinghouse on Science and Mathematics Curriculum Development at the University of Maryland, USA. covering forty countries indicated that the number of science and mathematics curriculum projects has more than doubled since 1966, but less than 20% of these efforts were directed to the primary sector. This is equally true in Southeast Asia.

It is not an exaggeration to state that less than fifty percent of the children in our region continue their schooling after four or five years of primary education. As the first few years of schooling are vital in the educational development of a child not only for his individual but also societal needs in the rapid changing world of today, it is incumbent upon international agencies and regional centres like UNESCO, INNOTECH and RECSAM to do their utmost to assist member states in providing every child with an adequate and relevant primary education.

RECSAM can maximise its contribution to science education improvement in the region by giving top priority to producing a prototype curriculum package in primary science and mathematics that is effective, modern, innovative, inexpensive and socially relevant to Southeast Asia.

Initially, RECSAM will concentrate to develop and produce one or two comprehensive teaching units which will be tried out on a small scale in a representative sample of schools in Malaysia in the first instance and

after a revision based on evaluation feedback will be further put on trial in other member countries. They could then serve as curriculum resource materials for further refinement by interested member countries.

The principles of systems analysis will be applied in carrying out this project. At the outset the main objectives for primary science and mathematics learning will be identified. It should include the reasons for the study of science as part of the cultural heritage of the child, reasons for learning science as much as possible through "doing science" in a practical way making full use of things available in the natural environment around the child, contributions of science learning to the development of the child during his formative years and the beneficial influence and the impact of science on his daily life and society, and the development of understanding and love of nature and respect for humanity and God.

It is necessary for the project to offer a wide range of teaching approaches including latest innovative methods and various media of educational technology where feasible and also a large choice in the use of materials for the same topics. It is also necessary to include the use of total evaluation in the long-term plans in order to ensure that teachers, pupils, materials, content, objectives, and environment will be evaluated at appropriate times. Initially, a few of these areas will be evaluated.

National and classroom constraints will be taken into account when plans for the pilot project are formulated. The inadequate supply of qualified teachers, the shortage of trained key personnel in curriculum development and management, the shortage of financial resources. the existing traditional teaching practices and the present teaching environment are some of the serious problems or difficulties facing curriculum workers in developing countries.

RECSAM plans to integrate and utilise its existing leadership courses for the development and production of the pilot project as follows:

Code	Course	No. of SEAMEO participants	Date
1. TCE-1	Modern Methods of Teaching & Evaluating Elementary Science	24	Jan. 15 - March 30

2.	TCM-1	Modern Methods of Teaching & Evaluating Primary Mathematics	24	Jan. 15 - March 30
3.	RAG-1/2	Project Implementation Techniques and Curriculum Requirement Analysis	8	Feb. 19 - March 30
4.	RCG-1	Development of Evaluation Techniques for Science Education	8	April 19 - June 30
5.	RME-1	Development of Elementary Science Apparatus	8	April 19 - June 30
6.	RCE-1 & RCM-1	Studies in Learning - Development of Primary Science and Mathematics Concepts in Asian Children.	6	April 19 - June 30

(Please see chart at end of this paper)

The first two courses catering to 18 teacher educators and senior primary science and mathematics teachers will involve the key personnel in the production of teaching units and sub-units, and teacher guidesheets on one or two topics based on a 'systems oriented science' approach.

Meanwhile participants at the RAG-1/2 will devote their time to developing suitable guidelines for the smooth management of the whole pilot project.

Those at the RCG-1 course will make use of the teaching units produced earlier to develop appropriate instruments for trial evaluation in schools.

Key personnel attending the RME-1 course will study the requirements of apparatus, materials and equipment required by the teaching units developed in TCE-1 and TCM-1 courses and develop or refine these teaching and learning aids using inexpensive local materials as prototypes for use in trial schools.

The group of participants at the RCE-1 and RCM-1 courses will examine the suitability of the science/mathematics concepts which are incorporated in the teaching units and will develop suitable enquiry guidesheets for schools to use to see whether children can grasp these concepts set for the various age levels.

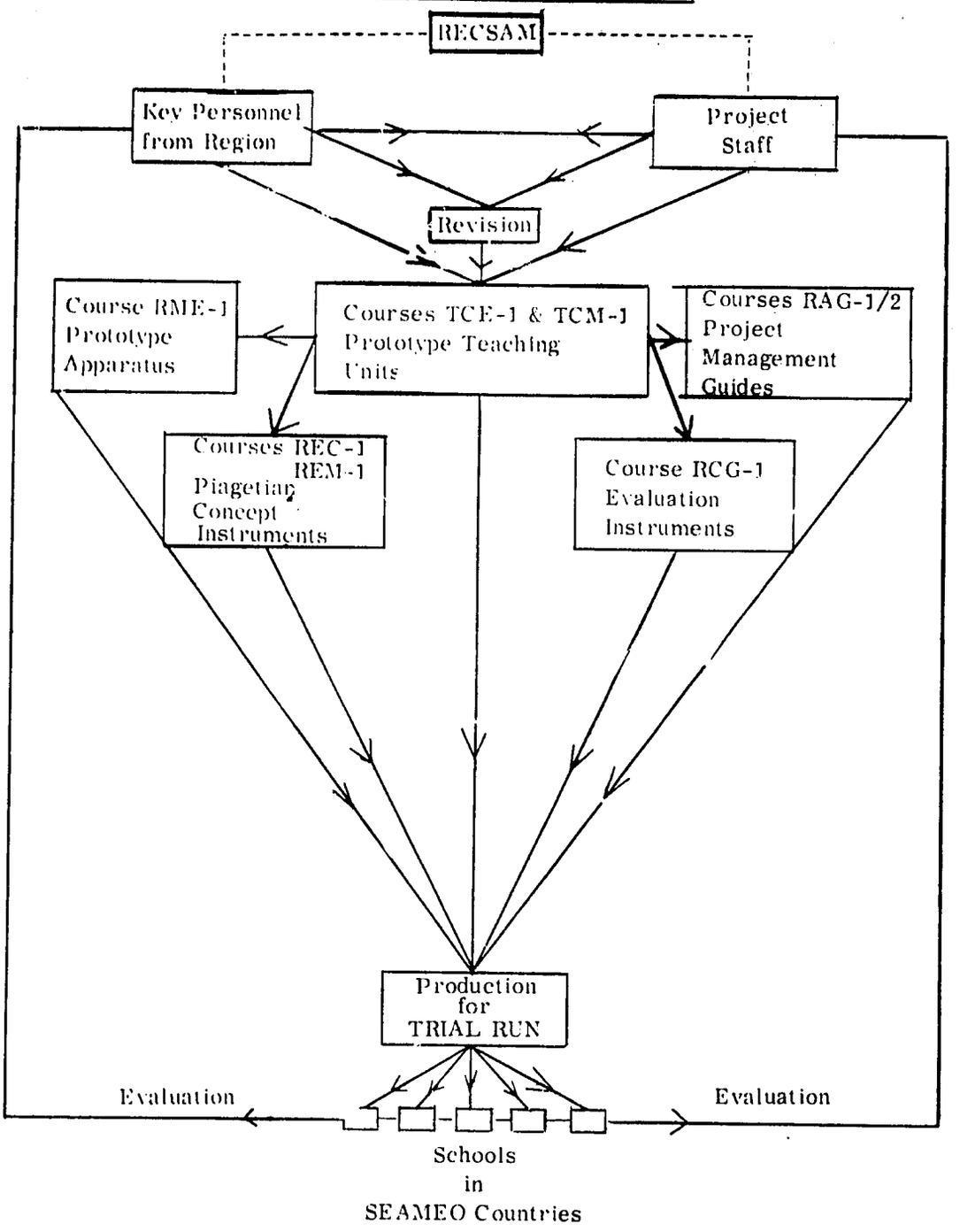
The pilot testing on a small-scale will be carried out locally with the assistance of local teacher educators, teachers and teacher trainees from local teacher colleges. It is scheduled in June and September, 1973. The

curriculum materials will be further refined by the project staff concerned after the feedback and then published for distribution and further trials. The full cycle will be repeated in the following years to produce other teaching topics, related evaluation instruments, prototype apparatus, etc. The whole project may take four to five years. We realise the enormity of this task but we are confident that with expertise available in this region we can produce useful curriculum materials as a contribution to regional education development.

Two groups will be responsible to carry out this pilot project namely, the production and the evaluation teams, with the project coordinator as the liaison officer. The teams will be made up of course directors and other staff members from the Centre and four science/mathematics education experts from the Faculty of Education, University of Malaya. Professor Sim Wong Kooi of the University of Malaya is the Centre's Chief Consultant.

This blueprint of a dynamic regional cooperative programme for the improvement of science and mathematics education in Southeast Asia has multi-national benefits. The key personnel from the region, by attending courses at RECSAM will have the best opportunities to study together the common problems in educational development, the diversity of their educational systems and education practices, and foster greater mutual understanding and appreciation of the efforts of their countries in the improvement of education for their youths. At the same time, with the expertise assembled together at the various courses, they can contribute their ideas and pool their talents and local knowledge together to develop and produce their own prototype science and mathematics curriculum materials taking into consideration the success and failures of curriculum projects elsewhere, the latest trends in curriculum development, our Southeast Asian environment and our rich cultures, our socio-economic needs and the limitations of our resources.

CHART - DEVELOPMENT OF SOUTHEAST ASIA PRIMARY SCIENCE PROJECT (SEAPS)



Reference : ....

Reference: Courses:

TCE-1	Modern Methods of Teaching & Evaluating Elementary Sc. Gen. Science.
TCM-1	Modern Methods of Teaching & Evaluating Primary Mathematics.
RAG-1/2	Project Implementation Techniques and Curriculum Requirements Analysis.
RCG-1	Development of Evaluation Techniques of Science Education
RME-1	Development of Elementary Science Apparatus.
RCE-1	Studies in Learning - Primary Science.
RCM-1	Studies in Learning - Primary Mathematics.

Discussion Summary of Mr. Chin's Paper

Participant: Why is it that the study of science is part of the cultural heritage of the child?

Speaker: In the past educators have regarded Science as imported, an implantation of science to their culture. I do not think this is correct. Sciece is international. It has developed through the cooperation of various countries from earliest history of mankind till now, so it is part of the culture of a child. Therefore, we have to teach science as part of the heritage handed down to us through our ancestors.

Participant: How would you apply programmed teaching as developed by INNOTECH to the methods used at RECSAM for teaching and evaluating primary mathematics?

Speaker: The key to success of any programme depends on the design and the way the teaching programme is worked out. The important thing is the content, developed in such a way that you can teach every child by programming well. My paper is concerned with designing the content, while INNOTECH is concerned with how to carry out the design. Our task is difficult as a wide range of teaching approaches must be included so that any member country who is going through the various types of teaching approaches will select the ones that most suit the conditions and the needs.

Participant: What are the qualifications required to become a trainee of RECSAM? Are there some follow-up programmes for participants after they have returned to their respective countries?

Speaker: Although certain qualifications are required, the Center often has to accept those who do not have htese qualifications, because the country concerned would otherwise miss the scholarships. Regarding the question on follow-up programmes for participants after they have returned to their respective countries, we have communicated with the member countries. A better follow-up could be done when we have a regional project. Once we have a regional project, we can use our participants to have a follow up in

terms of trying out certain materials which we have developed in the region.

We are trying to make ourselves more useful in terms of getting our participants on their return home to be more and more involved in curriculum development.

Participant: I wonder whether RECSAM would develop trainees who would be able to teach in every development of science and technology and thus bridge the gap of differences in rural and urban societies.

Speaker: The Center is developing materials and techniques of teaching social relevance. During the training the trainees will be introduced to philosophical ideas, etc., then they will have to reflect their own cultural background in the development of the programme.

Participants: How do you deal with the retraining of teachers using the approach of making full use of several related courses and involving the participants in the development and production of suitable and relevant teaching and learning materials for the region?

Speaker: This is done through seminars or workshops. Educators are invited to these seminars or workshops and special attention is paid to the teacher education.

Participant: What is meant by Prototype Teaching Units?

Speaker: In Malaysia there are two kinds of teaching units, in Malay and in Chinese. RECSAM will provide the units in English and the member countries are asked to cooperate by translating them in the language required.

EDUCATIONAL INNOVATION FOR NATIONAL DEVELOPMENT: THE EL SALVADOR EDUCATION REFORM PROGRAM

by Dr. Stanley D. Handleman
Chief Education Officer
United States Agency for International Development
San Salvador, EL SALVADOR

Whenever I am given the opportunity to address a group of notable educational or political leaders who may affect education in various parts of the world, it is always difficult to balance two conflicting emotions. The first is the impulse to be an educational missionary - that is - to try to export one's own experiences in cultures different from yours and to try to make them exportable to your culture. This is particularly tricky when one lives and works in a culture different from one's own, within the context of increasing feelings of nationalism and sensitivity to foreign influence. Running parallel with this thought, is the growing realization that the developing nations of world face common problems in many areas, one of which is education.

To me, education is probably the most sensitive of all areas in the process of development: for whatever decisions you here make today concerning your individual countries, and by extension, the entire region in which you work, can affect the lives of your children and of their children. It is against this background that I share with you today the experience in educational innovation in El Salvador.

El Salvador, smallest geographically of the American republics, lies in Central America between Guatemala and Honduras, facing the Pacific Ocean. El Salvador has an area of roughly 8,000 square miles, and a population of over 3,000,000 giving it a population density of 390 per square mile. About 92% of the population is a fusion of Spanish and Indian parentage; the remainder consists of small white and Indian minorities. An estimated two thirds of the population is rural.

While a few of the Indians have retained many of their old customs and traditions, the great majority of the population has adopted the Spanish language and culture. The basic economic and social problems of Salvadoran economy include a heavy population pressure on the land, and a very high population growth rate (3.5%), an economy almost wholly dependent on coffee, limited unused arable land and mineral resources, and a very uneven distribution of income. Because of the innate self-

confidence and dynamism of the Salvadoran people, one finds not passive acceptance of things as they are, nor feelings of self-pity, but instead, a firm determination to solve problems and to alter its destiny.

Since 1961, El Salvador has actively promoted the Alliance for Progress goals of: 1) strengthening democratic institutions in a stable political environment and 2) accelerating economic and social development necessary to raise the Salvadoran standard of living. Given these conditions, the development of human resources-of people-is both the means and the objective of national development. Education, in the broad sense, is the way in which human resources are developed. It is the way in which people obtain the knowledge, skills, and motivation needed to improve the quality of their lives, and to contribute to a more creative and productive society.

General social progress cannot be achieved by a small elite commanding a huge constituancy of uneducated people. Success in development requires that at least the majority of people be supplied with the knowledge and opportunity to participate, to some reasonable degree, in the enterprises of economic, social and political activity.

As is often the case in developing countries, recognition of the needs for human resources development presents a difficult problem in that such needs cannot be met in isolation. A vicious cycle of geometrically increasing population coupled with limited economic resources presents the classic pattern of underdevelopment. The explosive population growth, the large scale unemployment and underemployment, the disparity in income distribution and a lagging economy, all converge to reinforce the idea that a different kind of education must be developed and provided to increasing numbers of people and all at costs within the national means.

In order to fully understand and appreciate how El Salvador is attempting to overcome these fundamental problems, specifically in the field of education, I think it necessary to explain what education looked like prior to El Salvador's first five year plan for educational reform which began in 1968, although there were previous attempts of reform.

Administratively, the Ministry of Education was a fragmented, unintegrated organization which functioned under various roofs in different parts of the capital city of San Salvador. This physical separation of the various arms of the Ministry led naturally to poor communication and articulation

of its employees and its programs. Decisions concerning strategies and goals of one section often bore little relationship to other divisions of the same Ministry.

Although the Salvadoran Constitution gave each child of public school age the right to a free primary school education, there were simply not enough schools in which to teach, especially in the rural areas where most Salvadorans live. Teacher preparation was often haphazard through a system of loosely connected normal schools, some of which had no accreditation by the Ministry of Education. In addition, virtually all junior secondary school teachers (grades 7, 8 and 9) were elementary school teachers with little or no preparation beyond this level.

Teaching and learning were anachronistic with emphasis placed upon rote memorization, reinforced by a year-end examination system based almost entirely upon the student's ability to memorize and regurgitate unrelated factual information which had little relationship to basic principles of child growth and development. The curriculum itself was heavily loaded with factual material often unrelated to specific learning outcomes or objectives. School supervisors, who ostensibly were to lend assistance to the classroom teacher, were themselves products of the same system and often confused the role of supervision with inspection.

Given this structure, it is not surprising to note that between 1965 and 1970 the total dropout rate from 1st to 6th grade was 71%. Salvadoran officials of the Ministry of Education were well aware of these problems and of the need for a total strategy to help to solve them as far as was possible given the limited resources of the country.

Late in 1967, two events occurred which provided a point of departure which allowed the Salvadoran government to face up to its problems in education in a practical, action-oriented way. These events occurred almost simultaneously in two different countries, the United States and El Salvador, who both sought strategies to effect a more efficient, relevant and cost-effective system of education for Latin America. In El Salvador, Presidential elections were held in 1967, and the newly elected President, General Fidel Sánchez Hernández, placed primary emphasis upon education reform for his country. To this end, he appointed as his Minister of Education Lic. Walter Béneke, a young, dynamic man who had been El Savador's Ambassador to Japan. Because of his interest in the Japanese use of educational television, upon his

return to El Salvador to assume his new post as Minister of Education, he carried with him the conviction that only through the use of educational technology integrated within the larger framework of educational reform, could El Salvador stand a chance of overcoming, or at least alleviating its crushing educational problems.

At approximately the same time, a meeting of the Presidents of Central and South America met at Punta del Este in Uruguay to reappraise and re-examine the progress and problems of the Alliance for Progress. Prior to this meeting, President Lyndon Baynes Johnson formed a White House task force on educational technology in order to examine the possibilities and potentials for innovative educational technologies in Latin America. One proposal which came out of the task force was the creation of a pilot system of instructional television in a Central American country.

In one of those rare, fortuitous instances, 1968 was an example of an idea whose time had come. El Salvador was chosen as the pilot Central American country to investigate and implement an in-school system of educational television. It was already committed to massive educational reform, and was willing to place its best men in key decision making positions in order to attack its educational needs. Because it is relatively easy to begin a project under the aura of the good feelings which result from successful conferences, it would have been easy to make some basic mistakes and initiate the pupil with inadequate planning and with emphasis on hardware. This was notthe case in El Salvador. A key decision was made, even before implementation was attempted.

This decision was, in my view, one of the most important, if not the most important decision, to be made by countries or institutions who are thinking about the use of innovative technology to improve their systems of education. From the beginning of the project in El Salvador it was clear to key decision makers that technology, in and of itself, was no cure for all of the ills of its education system. It was thought that only if televisior were to be considered as one element in a total system of educational reform could the goals of the Ministry be met.

Three major objectives were set by the Ministry of Education for its reform program. The first, was to improve the quality of education, the second to extend education to more people, and the third, to improve the efficiency of the system. In short, the goals of the reform rested upon three concepts and three key words which are quality, sufficiency,

and efficiency.

Once the goals of the reform were clarified, a series of first steps and initial decisions were made. I think it is important at this point to emphasize that given the enormous pressure for change in El Salvador, decisions were made and actions taken with no little risk to the decision makers. After all, one does not change a two hundred year old system based upon inefficiency and elitism overnight without some risk of social and political disruption.

What is important to remember is that El Salvador took these risks and made its reform program work. It took faith, self-confidence, and not a little bit of stubborness to prevail - and there were many voices of protest raised and many objections from many quarters. First steps were taken. A five year plan for education reform was developed in order to achieve the three objectives previously outlined. The plan covered a wide spectrum of activity in education for El Salvador. It included administrative reform within the Ministry of Education, curriculum reform, upgrading of teacher training, improvement of school supervision, a system of on-going evaluation, the introduction of instructional television, a program of phased school construction, and a program of external technical assistance.

To achieve these aims, a government must commit itself to broad reform, and be willing to allocate large shares of its budget toward its support. Since 1968, when El Salvador's educational reform program began, the budget for education had averaged 30% of El Salvador's national government budget. It represented the largest share of the government's budget and continues to be so.

Now I should like to relate the overall plan to the objectives previously mentioned. Quality, Sufficiency, and Efficiency. In order to meet the objective of improvement of quality of teaching and learning, the Ministry created an office of Pedagogical Services, which had as its main function, the development of new curriculum which would be integrated, concentrated and relevant. Basic education in three cycles was developed, with each cycle representing three years. This erased the artifical barrier between primary school, as represented by a six grade program, and junior high school which was represented by an additional three grades. In other words, one of the underlying roles of the reform was to change the concept of basic education from six to nine grades. A child would therefore consider his basic education to consist of three cycles - three

grades per cycle.

The Ministry requested advisors from other countries to assist it in the development of its new program of study. The United States, through the U.S. Agency for International Development, UNESCO, and the World Bank, were major contributors in this area. It was decided that the educational reform would begin at the third cycle or grades 7th, 8th, and 9th. This decision was made because Ministry officials, upon looking at their educational system, saw that under the then present system of selective education, the Ministry wanted to "rescue" the relatively few students leaving the public school system. Those students represented a national resource which could not be ignored in terms of its potential contribution to national development. Further, this relatively small group would be more manageable in terms of the risks involved in such a major upheaval of traditional thinking concerning education.

Finally because there were so few junior high schools, because most teachers at that level were elementary school teachers, and because the concept of a nine grade basic education rather than one of six grades was decided upon, was this decision made. The new curriculum deemphasized heavy factual content, dealt in clearly stated learning objectives, and avoided excessive repetition and emphasis on rote memory.

A second decision concerning the improvement of educational quality was at the bachillerato or high school (10th through 12th) level. Traditionally, the high school was a way station to the University. What resulted were high school graduates without work and without marketable skills, since the University could not absorb the vast majority of high school system to provide vocational/technical education as well as academic education. This program could now permit horizontal mobility to students giving them the opportunity to complete high school with marketable skills, or to continue to post high school institutes or to the university should they so desire and should openings permit.

In addition, instructional television began at the 7th grade level in 28 pilot schools. Its goal was complete coverage of the third cycle or junior high school, grades 7th, through 9th by 1972 and would cover approximately 60,000 students at this level. A Division of Educational Television was created, and Salvadorans were trained in all aspects of television production, classroom utilization of television, equipment

maintenance and repair, techniques of program development, techniques of teaching by television, graphics and film production, and the creation of an instructional resouree center all fully staffed by Salvadorans.

It was decided that the television presentations would be in strict accordance with the new national curriculum, and would present the major segments of this curriculum using the most advanced techniques of visual presentation, as well as multiplying the effect of the best subject matter teacher television could find in the country. At this time the Ministry, recognizing the need for on-going evaluation of its new program of instructional television, requested USAID funds for on-going evaluation by the Stanford University Institute for Communications Research. The research was to be done under the general supervision of Dr. Wilbur Schramm, with a field research director in El Salvador whose task it would be to train Salvadorans in research techniques.

In addition, the research office was to provide a continuous reporting system of project problems and progress in order to provide on-going feedback to project decision makers.

A third element of quality improvement was the establishment of a centralized pre- and in-service teacher education system at the National Normal School. Sixty five normal schools were closed, and the Ministry opened a major institution consisting of 38 buildings, where all teacher training would take place, not only for teachers but for school directors and supervisors. Because of the great weakness in the area of junior high school teacher preparation, the Ministry made the decision to release groups of junior high teachers from their classrooms, continue their salaries while they spent an academic year at the newly established Normal School in order to up-grade their teaching performance levels.

The training included an introduction and orientation to the new curriculum for the junior high schools, introduction to modern theories of child growth and development, training in setting instructional and behavioral objectives, micro-teaching, and techniques for utilization of television in their classrooms upon their return to their teaching posts.

To reach the second objective of the reform, which was the improvement of the efficiency of the educational system, the administrative functions of the Ministry of Education were centralized, a new table of organization, including reclassification of functions was done, a re-working of the teachers' law, and the establishment of a unified pay scale for teachers was established.

A new system of pupil evaluation and promotion was established and a system of continuous formative evaluation of each student was substituted for the rigid device of irrelevant testing which led in no small part to the high dropout rate. This concept, it is hoped, will lead to a more realistic and flexible promotion system.

Of major importance was the development of an educational planning office within the Ministry of Education. Its role would be to integrate the various dependencies of the Ministry of Education (Division of Television, the Normal School, the Curriculum Committee), under a single coordinated plan, and to relate budget resources to needs. Outside experts were made available to the Ministry in order to plan for the creation of its planning office as well as experts in cost effectiveness and cost benefit ratios. An initial manpower projection study was also done.

The third objective of the first five year plan, sufficiency, was to extend education to greater numbers of people. As pointed out earlier, large sectors of the population, especially those in the rural areas, had little access to the first years of schooling through shortage of buildings, and fewer yet for grades 7th, 8th and 9th. Junior high schools were in such short supply and so scattered throughout the country as to make them all but inaccessible to the majority of 6th grade graduates.

The decision was made to begin an intensive program of school construction with emphasis on the rural areas. A simplified construction design was planned, and the concept of a 3-3-6 school was developed for the primary, or first two cycles. Specifically, the school would contain three classrooms, staffed with three teachers, but would offer the first six grades. This construction plan was the most ambitious ever undertaken in the history of El Salvador. It was called "The School a Day" program with the target of 2,600 classrooms under the 3-3-6 system, which implied the teaching of double sessions by the same teacher. This would shorten the school day with no concomitant loss of quality since the curriculum had become compressed, more compact, and free of all but the most basic courses.

Incentives to teach double sessions were built into the system through an increase in salary without doubling teacher costs. In order to achieve these targets during the first five years, external resources were required. USAID gave grant support through technical assistance and commodity procurement (television receivers, studio transmission equipment of ITV).

From 1968 through 1972 approximately $1.5 million in grant money was given to the Ministry of Education. Subsequently, two loans, the first for $1.9 million, signed in September 1970, was granted by USAID primarily for the provision of addition television equipment which would result in the creation of two Ministry of Education owned and operated television channels by early 1973.

A second loan for $8.2 million signed in February 1971 was primarily for the construction of 415 primary and 330 junior high school classrooms. In addition, under a World Bank loan, 40 new comprehensive senior high schools are scheduled for completion by 1973. In addition, the OAS, UNESCO, and British and Japanese government have contributed assistance as well as other international agencies.

At the end of the initial five years (1968-1972) what accomplishments have been made, and what problems and new directions remain? The Ministry of Education has been centralized, a new teachers' law has now been in effect for two years, the school construction program should be completed by the end of 1973. The Ministry of Education Planning Office is established, and has moved a considerable distance from intuitive planning to a rational, long range planning. A completely revised curriculum Kindergarten through Twelfth grade has been established and is now in use in all of the schools of the country.

Instructional television covers approximately 50,000 pupils in all public 7th, 8th and 9th grades within range of the TV signal. It has moved to new quarters, acquired additional transmitting and studio equipment and produces 15 hours weekly of instructional television in five basic subject areas: Language Arts, Social Studies, Mathematics, Natural Science and English. Last month, the Ministry of Education inaugurated its own two TV channels and plans to initiate public service broadcasting including adult education during evening hours since it now has this time available for the first time.

The National Normal School has been well established, and at the end of 1972, has retrained virtually all (1,500) third cycle or junior high teachers through its one year full-time program. In addition, courses for supervisors and school directors have been given, and school supervisors have given training to all 15,000 first and second cycle teachers in teaching methodology, evaluation and use of television and materials.

What has evaluation told us about the past five years? The Stanford University studies indicate that there is a clearly significant difference in learning between those students, who under experimental conditions, had not received the reform elements i.e. new curriculum, retrained teachers, television learning support materials, and those that have. The research indicates that in examinations which place stress upon creative, problem centered activities, the students who receive television do better than those who have not.

It is too early to tell whether the impact of the various elements of the educational reform in El Salvador will indeed lower dropout rates and retain children in school through nine grades of basic education. If only through construction of efficient, economical, and accessible schools in rural areas which were not existent before, it would be reasonable to expect that school enrollment would increase dramatically, and that retention beyond the first three grades should do likewise.

At the present time, cost-analyses studies indicate that the system of instructional television does not save money - and is as yet, an additive cost, though a low one.

The Stanford studies also indicate a widespread acceptance of television on the part of classroom teachers and parents. As teachers become used to television as a part of their daily teaching lives, its use become less threatening but, on the other hand, its users become more critical. When a teacher has herself received a one year retraining course in methods of teaching and subject matter content, the gap between the classroom teacher and the television teacher narrows considerably.

This does not, I think, mean that the teacher in the classroom can "go it alone." She still, it must be remembered, has received one year's retraining, lacks classroom materials and has large numbers of students to teach. Further, when the 3-3-6 school system is fully operational, and the teacher will be teaching two shifts, television can relieve her of the added burden of time and preparation if it is used properly.

The continuous promotion scheme is being put into effect throughout the school system, but only time can tell whether it will serve its intended purpose of student retention for longer periods of time in the public school system.

At the end of 1972, the Ministry of Education, through its Planning Office, completed its second five year plan - the second stage in the

education reform. The new administration - and the new Minister of Education, Dr. Roselio Sanchez, have not only continued the reform program, but plan to strengthen and expand it. As far as the first and second cycles of basic education are concerned (grades 1 through 6) the following represent the plans of the Ministry for the next five years: 1) expansion of double shifting to approximately one half of all teachers; 2) study of school population by communities in order to relate school construction needs more closely to local demands 3) a major evaluation of the basic curriculum and modification, if necessary 4) to effect a more normal matriculation curve by student age so as to avoid wide fluctuations between grade and actual age; 5) the use of educational television in the second cycle (grades 4, 5 and 6) during day and evening hours; 6) the development of a nation-wide primary school teacher retraining program through television on Saturday mornings and evenings; 7) the expansion of public Kindergarten with emphasis in the rural areas; and 8) the creation of a central office of Research and Evaluation.

As far as projected plans for the third cycle of basic education are concerned (grades 7 through 9) the following steps will be taken: 1) to increase the number of class hours through double shifting with compensatory salary increase; 2) the use of instructional television for evening programs for those adults who may wish to earn their third cycle certificates and for a re-evaluation of television and its efficacy at the third cycle level. At the senior high school level, the five year plan calls for increase in the number of teaching hours with salary incentive, improved distribution geographically of bachillerato (high school); 3) relating the course of study at the diversified high school to the economic and social needs of the country.

Finally, the Ministry of Education will begin to explore the possibilities and potentials of non-formal education so that it can better serve the needs of a broad variety of people who may never have been, or would never be enrolled in a formal school. This has enormous implications for the development of education in El Salvador in directions complementary to, and perhaps eventually alternative to, the present system of classroom instruction. With the capability of television in the evenings for the first time over two separate channels, there seems to be no limit to programs heretofore inaccessible to the majority of the Salvadoran population.

Programs of an inter-Ministerial nature are being planned. Examples

would be a collaborative effort between the Ministry of Education and the Ministry of Agriculture in a program of agricultural extension techniques to the small farmer in the rural areas with television or radio as the basic delivery system. Also possible, through collaboration with the Ministry of Health would be programs in child care, nutrition, and possibly, family planning techniques.

As far as overall planning is concerned, the Ministry of Education realizes that only by serving the entire population, and not just the in-schooi population can it really be a Ministry of Education serving continuing needs of its people, rather than a Ministry of Schools which it has been in the past.

Further, it realizes that education reform in and of itself cannot insure economic and social development, but that long range decisions by the government concerning such major areas as tax reform, land reform, and a more equitable distribution of wealth must be effected if education is to have pay-off.

Finally, the Ministry of Education, looking to its future needs in terms of servicing the population both in and out of schools, recognizes that even more radical approaches must be considered if it is to avoid bankruptcy. Often, we as educators, believe in a mystique which may or may not be justified - that is - that the developing countries cannot depend solely upon a Ministry of Education to solve its economic development problems. Often, what begins as an exciting use of educational technology leads to the realization that it is intimately connected with the policies and strategies of not only its sister Ministries but of policy decisions made at the highest level.

This does not mean that El Salvador will stop or slow down with its program of educational reform but that its success must act as a catalyst to effect major strategy decisions at all levels of government if economic development and self sufficiency is indeed a major goal of development.

That solutions must be found is clear. Educators, political leaders, economists and professionals of an interdisciplinary society, leaders of the community must gather to reach conclusions which have to be continuously revised in the light of increasing demands.

I certainly cannot give you any such universal strategy anymore than I have clear answers for El Salvador. I can only point out to you where

the dangers and opportunities lie, where educational reform can lead, and that it can serve as a catalyst for profound changes in developing societies.

construction programme, especially in the rural areas, so that children can go to a school; and 3) TV will retain children longer, because it is more interesting than regular school.

Participant: Would there be sufficient internal resources to finance the comprehensive high schools after the foreign loans have stopped?

Speaker: We have taken that into consideration.

Participant: Why is El Salvador centralizing, whereas the Philippines is trying to decentralize educational administrative functions?

Speaker: Centralization of the educational administration is suitable to the size and conditions in El Salvador.

Participant: Are there sufficient internal resources to maintain such a system after external assistance is withdrawn? A cost-benefit analysis is not relevant if there is a definite ceiling in the cost-factor.

Were other alternatives considered before the TV project was started?

I question the evaluation and measurement of success which are based on things which are not being attempted through the traditional classroom. Were there alternative and cheaper ways of producing the same results?

Speaker: From the beginning the Minister of Education was convinced that TV was the best method for El Salvador's needs and that he did not know of any other way of changing the approach of 14,000 teachers.

Participation: I am surprised to hear the comments concerning radio, and I would like to hear more about the use of radio programmes and projects using local resources. I wonder if the "halo" effect referred to in radio may not also apply to TV and the initial interest may wear off. I am surprised that there is not more information concerning cost-effectiveness. It may be that TV can be used well and inexpensively in Teacher Training rather than regular

classroom broadcasting. A new radio college currently being developed in Mauritius will be tried in one or two other countries soon.

I also wonder whether video tapes cassettes could be used rather than traditional TV broadcasting.

Speaker: The unit cost of using TV can be greatly reduced if it is used for a variety of purposes as well as classroom teaching, such as teacher training and non-formal education after school hours. Thus, the unit cost has been reduced in El Salvador from $164 per student per year to $14 per student.

Video tape cassettes may be very expensive and would also imply a sophisticated teacher who could organize her day around the use of cassettes. Even if there is a "halo" effect with TV it is now locked into the schoolday with TV guides and the pupils and teachers cannot operate it because there are no textbooks.

Participant: I am concerned about this TV system because of what I have seem when I visited the educational TV programmein American Samoa. First, conversations with students revealed that many of them were very bored with the TV programmes. Second, even the experts were very modest in stating that they were only using the TV because they could not wait until the teachers were sufficiently qualified so that the teachers were learning from the programmes at the same time as the pupils.

Speaker: In American Samoa the programmes wers poor because they produced as many as 200 a week and the basic reason for the TV programme was to get people in an American territory to speak English rather than to improve the educational system.

Participant: I wonder whether using educational TV solely for learning purposes tends to produce a spector society rather than a participating society where students become actively involved in improving their daily lives.

Speaker: It depends entirely on what kind of programme is provided and on the follow-up on the programme.

Participant: What is the cost to date?

Speaker: The TV project costs US$2 million and USAID has supplied a total of US$15 million for the total educational reform to date.

SELECT COMMITTEE MEETING

BRAINSTORMING FOR AN INNOTECH RESEARCH PROGRAMME

ON

EFFECTIVE AND ECONOMICAL DELIVERY OF MASS PRIMARY EDUCATION

One of the basic purposes of INNOTECH is to determine common priority problems among the countries of the region and to develop prototype solutions which can be tried out and adapted by the various countries themselves. The Report of the Technical Working Group (TWG) Meeting (July-August 1972) identified as a high-priority area the development of an effective and economical delivery system for mass primary education. It is the hope of the INNOTECH staff that this fourth day of the seminar can be devoted to discussions concerning the directions that the Centre's efforts can best take in seeking prototype solutions to the problems of the delivery of mass primary education. Specifically, we would appreciate your help and guidance in setting guidelines for four or five related studies which could be undertaken by the Centre over the next several years. And, ideally, these several studies should be designed to explore quite different methods of delivery so that we will not be locked in too early on a given approach.

I think that it is safe to say that, for the majority of countries in this region, the necessary resources to provide a universal traditional education for primary age children are simply not available. And the ever-growing population of school-age youngsters will only magnify the problems in the years to come. As stated in the TWG report, "No matter how effective the system, it must be economical in relation to the available resources of the country." If traditional methods (school rooms, textbooks, teachers, daily attendance, etc.) cannot be provided within the available resources, we must strive for potentially viable alternatives.

During this week much of our discussions have reverted to the problems of what is to be learned because these problems do impinge on the problems of how to learn. INNOTECH currently has four studies underway concerning the "what" problem. One study is a comparison of stated educational objectives among SEAMEO countries. A second is an attempt to develop a model whereby member countries can derive life-skills

objectives as the desired outcomes for children who do not go beyond primary education. A third concerns the revision and publication of guidelines for the derivation of and the setting of priorities among objectives (based upon a model developed last year in Indonesia). The fourth concerns the expectations of parents, schools and communities in relation to educational outcomes.

These four studies should provide guidelines on the valuable "what" of primary education, and we recognize that the "message" will, in many cases, influence the choice of the "medium". For example, an objective concerning involvement in village life may be extremely difficult to achieve if children are transported to the cities for their education. Nevertheless, we should be able to conduct a variety of preliminary studies on potentially - viable alternatives to our present systems of primary education. The TWG report suggests (p. 31) that delivery systems". may be designed on the assumption that the curriculum will include:

- the 3 R's,
- the skills relevant to rural living,
- preparation of (for?) vocational/technical training,
- population education."

First of all I therefore suggest that this Select Committee focus on alternatives to traditional education and that it also focus on delivery systems rather than on content.
needed for a given study.

One solution to the lack of resources is to find additional resources, perhaps in the pattern of the Barrio schools. I suggest for the Committee's consideration, however, that this procedure is primarily a way to provide the minimum resources necessary and, thus, is not in itself a means which can reduce the overalll cost of education. (I also recognize the probable educational value of self help.) Therefore I suggest that we focus on the economies of delivery rather than on increasing resources, per se.

I have purposely omitted the words "teaching" and "taught" from the previous discussion as much as possible. My purpose was to direct our attention to learning rather than teaching. A delivery system, thus, is not a method of teaching; it is a system which engenders effective learning. I make this distinction because the semantics of it helps me to consider a

wider variety of approaches which may provide the necessary conditions for learning and to avoid preconceptions about the systems needed to provide the conditions for learning.

Another word which I have again purposely omitted, except in the title, is "research". Rightly or wrongly, research is often taken in education to mean comparative studies of instructional methods in the classroom. A survey is often considered to have a lower order of respectability, and cost analyses are thought of as the proper work of economists rather than researchers. My purpose in avoiding using the word research is simply to keep open as many avenues to finding potential solutions as possible. You may find, for example, that a survey and evaluation of present educational radio broadcasting in the region could provide key insights. Or you may decide that cost analyses of centralized learning facilities vs. local facilities would be needed. Or you may decide that the most relevant studies that INNOTECH could conduct would be research on a variety of instructional methods. The point that I am stressing is that we need not be limited in the kinds of studies which INNOTECH undertakes for solutions to the delivery problem.

What will limit the kinds of studies (and the number/size of studies) are the resources available to the Centre. There will be some 10 professional staff members from the region available for the studies, about 5 of whom will be senior specialists. In addition, we hope that 3 - 4 experts from outside the region will be available. In addition, there probably will be some $8 - 10,000 (US) available for field travel, and some $5,000 for research materials and supplies. Obviously, we cannot think at this stage of large-scale studies; rather we must focus on critical studies which will permit a high payoff in terms of giving the information we need to decide on future directions for larger-scale efforts.

So far in this discussion, as well as in the TWG report, the ultimate goal has been some future delivery system which will be both effective and economical. This goal is valid, but I suggest that, for the benefit of both INNOTECH and member countries, we also need a portion of these exploratory studies to provide a fast-payoff product that can have immediate utility for SEAMEO countries while, at the same time, provide a basis for the longer-range goal. An example of such a product is a project which is currently underway at the Centre which explores the possibility of using "non-qualified" persons for the teaching of reading to beginning primary school students. This specific project is called

Programmed Teaching, and it provides village adults (with only sixth-grade education) with structured guidelines which they follow in helping first graders to learn reading skills in a rural area of Malaysia. Should this project prove feasible, it would have immediate payoff of being usable for languages other than Malaysian and, perhaps; for other Subject areas. It also should lend itself to the longer-range of delivery system improvement by providing a potential cost-effective component of such a system.

To summarize my suggestions for the focus of this Select Committee meeting:

- guidelines for 4-5 related studies,
- consider alternatives to traditional education,
- consider delivery systems (or components) rather than content,
- consider means to achieve economies of delivery rather than means to increase resources,
- focus on conditions of learning,
- we need not be limited in the kinds of studies INNOTECH undertakes,
- recognize the limits of INNOTECH's resources,
- give emphasis to critical studies with a potential high payoff in making decisions for future larger-scale efforts,
- consider recommending a portion of studies having a potential fast payoff and immediate utility.

Suggested procedure for conduct of this meeting:

First, let us make tentative decisions about the 4-5 basic types of delivery systems (or approaches to learning) that would have most value for the INNOTECH research programme over the next several years. (Let us not make these tentative decisions in order to make various proponents happy. Rather, what are the most valuable general approaches to providing for economical and effective delivery?)

Second, we should attempt to describe what aspects of the selected delivery systems we would want to investigate.

Third, we will need some general guidelines as to how and where these studies should be conducted.

These three steps should provide INNOTECH with sufficient inputs upon which we can base our more-detailed research designs. Following this meeting, the professional staff will spend up to one month in the completion of these designs.

In addition to the above assistance, I would also appreciate this Select Committee's recommendations concerning our next regional seminar to be held in late October 1973. We are planning two such seminars each year. Each seminar should be problem-oriented, and the problem should be directed toward the INNOTECH research programme so that - once again - we can benefit from the inputs of seminar participants. I would suppose, therefore, that the next seminar will once again focus on mass primary education, but we may want to sharpen that focus on particular problems on delivery methods. Therefore, I am asking this Committee for:

- A suggested problem-orientation for the October seminar.
- Suggested speakers and topics from each SEAMEO country,
- Four suggested speakers from outside the SEAMEO region, and
- Suggested sources of funds to finance non-regional speakers. If we could secure early fund commitments, we could contact external speakers at an early date and avoid the last-minute exchange of cables (and possibly hurried preparation of papers).

This paper has presented INNOTECH's needs and expectations of today's meeting. Please feel free to make any modifications in the suggested procedure or to question any of the assumptions which I have made.

Thank you

REPORT OF THE
SELECT COMMITTEE MEETING
ON FUTURE
INNOTECH RESEARCH PROGRAMMES

A Select Committee met for one full day in a brainstorming session concerning future directions for INNOTECH research efforts in the development of economical and effective delivery systems. The Committee was made up of Seminar speakers, heads of delegations, the INNOTECH professional staff and representatives from SEAMES, RED and DRC.

Two documents were used to provide guidelines for the conduct of the Select Committee meeting. The first was the Proposed SEAMEO Development Programmes for the 1970's, Report of the Technical Working Group Meeting, convened by SEAMES, 19 July - 2 August 1972: specifically pages 29-40 which describe the overall project on Development of an Effective and Economical Delivery System for Mass Primary Education. The Second document was a working paper, included herein, which was prepared by the INNOTECH staff specifically for the Select Committee Meeting, titled Brainstorming for an INNOTECH Research Programme on Effective and Economical Delivery of Mass Primary Education. This working paper is included herein.

Brainstorming produced descriptions of a variety of potential delivery systems and approaches to providing mass primary education. Attention was focussed throughout the discussion on the provision of mass primary education within the constraints of available resources through innovative departure from traditional activities. Among approaches discussed in some detail were

- scheduling (including multiple shifts, reduction of formal schooling time, nultiple use of facilities, etc);
- expanding teacher utilization (dramatically increasing teacher -student ratios through such means as scheduling (above), use of community resources, personnel learning centers, self-study, correspondence instruction, mass media, larger classes, etc.);

- ___ determining those learning experiences which can be provided outside formal schooling, through both non-formal and informal means;
- ___ use of technology, including radio and TV;
- ___ community schools and learning centres;
- ___ putting the burden on the learner by providing alternative learning situations;
- ___ determining exactly what basic minimum education is needed in given cultures in an attempt to refine school content;

The recommendation of the Select Committee was as follows:

The INNOTECH professional staff should postulate a wide range of delivery systems and approaches which appear to have the potential for providing quality mass primary education within present resources/constraints. The components or other aspects of each system should then be examined thoroughly to identify those which are crucial to the feasibility and effectiveness of the systems. Compare crucial components among all delivery systems to determine those having the highest priority for the INNOTECH research programme. Priority will be determined by three criteria: (1) how many delivery systems share a common crucial component. (2) whether the work can be accomplished within the resources available to INNOTECH - and with the resources and cooperation which SEAMEO member countries are willing to contribute to projects within their countries. Results of the preliminary analysis of the potential research studies would be transmitted to each member country to illicit interest in cooperative research efforts. After such results will have been transmitted to member countries an attempt will be made by them with INNOTECH's guidance to isolate certain elements which may be used in the development of a SEAMEO Model for delivery mass primary education economically and effectively.

APPENDIX

LIST OF PARTICIPANTS

SEAMEO Member Countries

INDONESIA

Mr. Hussin	Director Institute of Development Information Office of Educational Development Jalan Menteng Raya 23 Jakarta
Mr. Jusuf Enoch	Director Institute of General Planning Office of Educational Development Jalan Menteng Raya 23 Jakarta
Dr. Tarwotjo	Head Primary Education Service Directorate of Basic Education Directorate General of Education Hanglekir II - Kebayoran Baru Jakarta

KHMER REPUBLIC

Mr. Nhoeng Nhan	Director Primary Education Ministry of National Education Phnom Penh
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Mr. Sok Heng	Primary School Inspector Kampong Chhnang

LAOS

Mr. Bounthong Vixaysakd	Director Primary & Adult Education Ministry of National Education Vientiane
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Mr. Southany Munahaxay	Head Primary Education Division Ministry of National Education Vientiane

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Mr. Ahmed Salleh	Chief Education Officer Johore

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Mr. Chen Keng Juan	Principal Pei Chun Public School

THAILAND

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VIETNAM

Dr. Nguyen Quy Bong	Professor of Education Technical Teachers College Saigon
Mr. Nguyen Duc Minh	Specialist Directorate of Planning & Research Ministry of Education Saigon
Mr. Bui Quang Kim	Instructor Saigon Normal School Saigon

GUEST SPEAKERS

1. BRAZIL

Dr. Mary Ann Cusack	Director Educational Technology Post Graduate Program National Commission of Space Activities (INPE) Sao Paolo

2. ETHIOPIA

Mr. Haile Yesus Abeje	Assistant Minister for Elementary & Adult Education Ministry of Education Addis Ababa

3. RECSAM

Mr. Chin Pin Seng	Director Regional Center for Education in Science & Mathematics Penang

4. EL SALVADOR

Dr. Stanley Handleman	Chief Education Advisor United States Agency for International Development San Salvador

RELC

Mrs. Tai Yu-Lin	Director
Mr. G.H. Wilson	Specialist in Audio-Visual Aids
Miss Madge Claxton	Specialist in TESL/TEFL (Instructional Materials)

Regional INNOTECH Center Staff

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Mr. Teo Eng Chuan

Mrs. Anne Chi Eng Guan

Mr. Ishak bin Khamis

Mr. Khamis Noyo

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