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PAST EXPERIENCES AND PROMISING DIRECTIONS  
CONCERNING A.I.D. SUPPORT OF VOCATIONAL EDUCATION

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1. The Problem

- a. Administrator McPherson seeks guidance for developing policy regarding A.I.D.'s support of vocational education (voc ed) in LDCs.
- b. What is the nature of A.I.D. policy and experience regarding vocational education?
- c. Can U.S. experience regarding vocational education yield insight and/or models relevant for LDCs?
- d. Can U.S. institutions and firms be better tapped for appropriate technical assistance in vocational education?
- e. What lessons can be learned from the experiences of other donor agencies?
- f. What promising new directions are recommended for A.I.D., with what programmatic/project considerations?

2. Context

In many LDCs the median percent of students in formal vocational education is very small -- about 10 percent of secondary enrollment compared with nearly 30 percent in industrialized countries. While about half of the education budgets of LDCs are devoted to secondary and higher education, these levels usually comprise less than 20 percent of the total school enrollment. Furthermore, they tend to graduate individuals either skilled in fields of low development priority, or with no immediately employable skills.<sup>1</sup>

While in low-income countries the percent of the labor force outside the agricultural sector remains small (about 11 percent in industry and 17 percent in the service sector, according to IBRD's World Development Report, 1980), in middle-income countries this is rapidly changing (23 percent in industry and 32 percent in the service sector). (For industrialized countries the labor force ratios for agriculture, industry, and the service sector are 6, 39, and 55 percents, respectively.) Yet the education and training systems of many LDCs have been slow to respond to the employment-related development needs of their increasingly varied societies.

<sup>1</sup>World Bank, Education Sector Working Paper, pp. 1980, 13, 18-19.

Instead, there is growing evidence of increasing unemployment of secondary and higher education graduates throughout the LDCs. Several ILO manpower forecasts for LDCs predict surpluses rather than shortages for many mid- and high-level vocational areas for which highly-educated persons are now being prepared.<sup>2</sup> Furthermore, social rates of return on investment in education remain greater in primary versus in higher education.<sup>3</sup>

At the same time, development-oriented employment needs have never been greater, both in the industrial and the social service sectors, and especially but not exclusively within middle-income LDCs. In addition, the ILO has projected that the world's labor force will increase 69 percent between 1970 and 2000, from 1.5 billion to 2.5 billion. Of this increase, 86 percent (887 million) would be added to the labor force of the LDCs, nearly doubling their 1970 figures.

The reasons for vocational imbalances within LDCs are frequently deep-rooted and situated in social, economic, and cultural conditions. Some of these are primarily structural in nature and external to the education system, such as the discrepancy between the supply of persons educated in certain knowledge and skills and the labor market demand for those skills. Or, the economic and other rewards of the society may be strongly skewed against the vocational occupations needed. Other reasons for vocational imbalances relate to qualitative dimensions of the educational/training system including, for example, the scarcity of well-qualified instructors and learning tools or the inappropriateness of the curriculum. Still a third set of reasons reflects the social attitudes of a society. For instance, higher level education leading to certain occupations may be regarded as the only acceptable course for those already of high social status or aspiring toward it. Additionally, manual work may be deemed culturally inappropriate or undesirable for such individuals.

Because the problem of education and training for employment in developing countries is inevitably tied to macro structural factors of supply and demand, micro factors concerning the quality of vocational education, and social attitudes, development strategies to address the problem must integrate all three levels of concern.

Preliminary to considering promising new directions, it is useful to briefly examine A.I.D. experience regarding vocational education and training.

<sup>2</sup>Blaug, M. "The Quality of Population in Developing Countries, with Particular Reference to Education and Training," p. 366.

<sup>3</sup>World Bank, World Development Report, 1980, p. 49.

3. A.I.D. Experience Regarding Vocational Education

- a. Level of funding for vocational/technical education and training

A PPC/PDPR/HR memo (F. Method, 2/12/82) indicates the following funding levels for vocational education:

Under EHR Section 105 program --

FY 81	9.8 million
FY 82	11.9 million (est)
FY 83	15.8 million (projected)

Under ESF program --

Annually 3 - 5 million

Under other functional accounts --

Annually 15 - 20 million (roughly est'd)

- b. Nature of programmatic support

Illustrative A.I.D. projects for vocational education are noted in Appendix A.

A summary analysis of selected<sup>4</sup> A.I.D. projects for vocational education appears in Appendix B and yields the following observations:

- The focus of recent A.I.D. vocational education projects appears more often urban than rural, though in many cases the distinction is not clear.
- The market orientation tends more often to be the industrial or the informal sectors rather than the rural sector.
- Most vocational education project initiatives are carried out through the public rather than the private sector.

<sup>4</sup>The projects are chosen from a DIU printout dated 5/17/82, of projects identified with the selector "vocational education." The printout draws from 66 percent of the A.I.D. projects active in or since 1974. Projects are selected to illustrate a sampling of countries, budgets, and designs, and for which adequate descriptive text is provided in the printouts. Projects are not cited if the descriptive text is conceptually redundant since the aim primarily is to synthesize strategies and lessons learned.

- Non-school projects predominate over school projects, although many are a mixture (for example, using school facilities or staff for an out-of-school population).
- The target population is most commonly out-of-school youth and adults.
- Though male participants predominate, there is an increasing attention to women.
- School projects tend to focus on curriculum development for prevocational studies such as practical arts/skills training.
- Very few of the A.I.D. projects have an income-generating component, nor a direct link with post- or concurrent employment.
- Virtually no assessment is indicated in the DIU materials regarding how well the intended technical, mechanical, construction, or commercial skills are mastered by the participants.
- Much of the project funding appears to have been earmarked for construction (e.g., of training centers), course development, training of teachers (including participant training), and equipment.

c. Assessment of projects

The projects judged most positively have such characteristics as:

- high rate of employment after training;
- program "graduates" stay on the job;
- they perform as well or better than "graduates" of other training programs;
- continuation, replication and expansion of the model;
- optimal enrollment;
- high rate of participant retention during the training;
- congruity between skills in which trained and needs of the the local economy;

- support from community residents in constructing the training center or in providing other assistance;
- cooperation from employers;
- improved skill and morale of trainers/teachers through participant training and in-country workshops;
- increased prestige to the skill area as a career choice;
- viable alternative to traditional apprenticeship system;
- increased productivity of participants;
- training workshops become partially self-financing through production component.

The projects receiving negative assessments are characterized by such features as:

- poor placement of trainees; lack of employment incentives;
- lack of private sector support; poor or non-existent links between training program and employers;
- weak host government (e.g., MOE) commitment;
- skills inadequately geared to the local economy;
- training inadequate for employment;
- school programs not keeping pace with country's industrialization and mechanization;
- late arrival of project equipment;
- delays in construction; inadequate physical facilities;
- poor planning, administration and record keeping;
- frequent change of contractor personnel;
- inability to adequately pay and retain qualified host country staff and instructors;
- inadequately skilled staff;

- inappropriate replication of model designed for different context and conditions (e.g., model for U.S. urban sector transferred to LDC);
- timelines too short;
- lower enrollment than expected;
- unsuitability of project participants: who are either unprepared for the training provided or who use the training as a springboard for higher formal education;
- language problems (contractors, participants, instructional materials);

d. In sum, A.I.D. appears strongest, to date, in its support of functional, production-oriented skills training conducted outside of the formal schooling system and closely tied to local employment opportunities, including self-employment in the informal sector. The case against formal vocational schooling (usually at the secondary level) continues to be made for reasons of external inefficiency (such as ineffective articulation with employers, lengthy turn around time in responding to employment needs) and internal inefficiency (for example, weak staff, outmoded equipment, inappropriate curricula or pedagogy). Such external and internal inefficiencies can also plague out-of-school programs. Formal schools in LDCs, however, must also contend with the fact that vocational schooling tends to be held in rather low esteem by those individuals who have been able to stay in the system.

A review of recent A.I.D. projects concerning vocational education further reveals a tendency for A.I.D. to work in LDCs through public rather than private sector entities. To some extent, this is reasonable given the large role that many governments play in providing employment and in selecting development priorities. However, the recurrent limitation of many vocational education projects is their poor linkage with industrial sector employers, many of whom constitute the private sector. For this reason, recommendation is made later in this paper to explore the greater involvement of private entities in vocational training tied to subsequent employment.

Lacking is a systematic analysis of current A.I.D. projects for vocational education or training that considers comparative costs per trainee/graduate and comparative placement ratios, together with hypotheses relating to variations detected.

#### 4. Experiences of Other Donor Agencies

##### a. World Bank

The Bank's 1980 Education Sector Working Paper shows an increase in aid for vocational and technical education and a decline for general and diversified curricula. From 1963-69, 25 percent of the Bank's education lending was for technical education; from 1970-74, 30 percent; and from 1975-1978, 41 percent. The corresponding figure for 1979-83 is projected to be 33 percent. Construction and equipment account for most of the Bank's outlay, although the proportion of funds going for technical assistance is increasing. Also increasing is the share of funds for nonphysical project components such as educational planning, the production of instructional materials, and the development of radio and television.

The Bank plans to support three types of vocational education within the formal and nonformal systems: general pre-employment training at all educational levels, project-related training, and training for the rural and the urban nonformal sectors. Specifically, the Bank expects that "nonformal programs offered at an accelerated pace in vocational centers following junior secondary school - or, in austere situations, at the completion of all or parts of primary level education - may prove more effective and less costly than formal technical or vocational institutions." (p. 92) Employed and unemployed rural and urban workers in need of skill upgrading will be particular targets of Bank support. The Bank also intends to fund tracer studies to analyze the placement of trainees as well as their performance on the job.

In addition, "training in management at all levels and for all sectors" is regarded of high priority, as is building LDC institutional capacity to develop manpower after the termination of a project.

To illustrate one current bank effort, a proposed vocational training project for the Philippines is here noted. A recent, unclassified USAID/Manila cable concerning the loan (May 1982, Ref: State 106137) comments on the project plan and suggests several means to strengthen it. In essence, the loan would develop and upgrade manpower skills needed for industrial production programs with priorities on small and medium-scale export-oriented industries. Proposed are the training of 76,000 employed workers in priority industrial regions, the training of out-of-school youth and adults, the construction and equipping of five new manpower training centers, and the equipping of nine existing centers. The points of observation and critique raised by USAID/Manila suggest potential trouble spots to be anticipated in vocational education projects generally.

- Although the project is based on a survey and overall plan, since the nature of manpower demand is so fluid, provisions should be made for continuous data gathering, analysis and assessment of training goals.

- Formative evaluation methodology should be articulated.
- Salaries of instructors must be comparable with journeymen who work on an incentive plan, otherwise it is nearly impossible to employ highly qualified instructors.
- The project should include provision for maintenance of new equipment, including the training of competent maintenance personnel, plus a budget allowance for preventive and other maintenance. Attention should be given to related materials development.
- Close supervision, monitoring, and evaluation is most critical to the attainment of project objectives.

b. International Labor Organization

ILO has undertaken extensive research on education and employment in LDCs, publishing much of this in the form of country mission reports and working papers. Since the 1950's, the ILO has advocated an apprenticeship model of vocational training for adolescents and vocational training programs for adults.

In 1981 the Vocational Training Branch of the ILO published a series of Modules of Employable Skill (M.E.S.), which aims to make vocational training more efficient and effective. The program seeks to identify and enable achievement of standards which match the requirements of particular jobs while providing the flexibility necessary to accommodate the varied needs of trainees. The M.E.S. training programs consist of Modular Units (M.U.s) of logically divided skills to be performed within a given job or occupational area. Learning elements cover specific learning objectives within each M.U. using self-contained instructional booklets.

Assessment of this model has not been found.

c. Unesco

See Appendix C for UNESCO recommendations concerning technical and vocational education.

d. Inter-American-Foundation

Of the grants for education and training, totaling 3.5 million in FY 81, most of these were for vocational training programs to increase the productivity and incomes of rural and urban workers and to increase their employment opportunities. Assessment of these efforts is being solicited.

### Summary

Most donors regard vocational schools in LDCs as not profitable. However, inadequate assessment has been given to whether this unprofitability stems from macro structural factors -- e.g., little demand in the labor market for the training received -- or from micro factors concerning the quality of the instruction received. What is known is that the successful U.S. models of the comprehensive high school and the occupationally-oriented community college are predicated on certain conditions which do not exist in most LDCs: a highly educated populace where competition for higher education is not greatly restricted, a lesser disparity of wage structure between the highly educated and the technically trained, and a history of collaboration between schools and industry.

#### 5. Relevancy of the U.S. Experience

As summarized by NIE's The Vocational Education Study: The Final Report, the U.S. public school vocational enterprise consists of more than 400 programs in seven occupational fields: agriculture, distributive, health occupational, home economics, business and office, technical, and trade and industry. The vocational enterprise also includes one nonoccupational field, consumer and homemaking education.

In recent years, States and local governments have spent 6 billion annually on vocational education, while Federal government expenditures under the Vocational Education Act of 1963, as amended, total about 700 million. The Federal role is chiefly to establish policy and to assist the States, by means of grants, to attain their vocational education goals.

Seventeen million students are enrolled in federally funded vocational education courses in the U.S. with about seven million of these in occupationally specific programs. Sixty percent of all students in public vocational education courses in the U.S. are in high school programs with forty percent in post-secondary and adult programs. This gives a per enrollee cost of about \$394. It would be instructive to know which type of program - the formal secondary school or the post-secondary and adult - has proven more productive, and more cost-effective in the U.S. context.

The U.S. public educational institutions offering vocational education -- comprehensive high schools, two- and four-year post-secondary institutions, vocational centers and technical institutes -- number nearly 20,000 and employ more than 370,000 full- and part-time instructors.

The public school vocational program of the U.S. is, hence, an enormous undertaking in terms of participants, staff, and funding. Although vocational education policy is centrally established by legislative acts, the States have considerable discretion in deciding how to implement Federal guidelines and in spending their basic Federal grants.

The massive NIE study of vocational education in the U.S. was unable to make any conclusive assessment of the effectiveness of either secondary or post-secondary vocational education programs. It claims that the research results are too limited, in terms of the available data and the difficulty of the research problem, to attribute economic and non-economic outcomes to vocational education experiences in the U.S. The study also declined to answer questions about the effects of Federal vocational education policy on students and about the returns on vocational education investment to society. Nor was the study able to assess whether vocational education has been an effective means of reducing aggregate youth unemployment, or whether it socializes young people in socially desirable ways.

Other studies (see Zymelman's Appendix C) of formal vocational schooling in the U.S. suggest that:

- Compared with on-the-job training, there is no significant difference between the social rates of return between the two approaches, but that the private rate of return is higher for formal schooling.
- Compared with general (academic) secondary schooling, vocational education yields a higher rate of return for students with the lowest aptitudes; otherwise, the evidence regarding costs and benefits is contradictory.
- Unemployment is decreased by training, regardless of approach, only when there are vacancies in the labor market.

Other findings suggest that vocational training programs must, ultimately, be assessed not only through cost-benefit analysis but also in terms of personal characteristics and motivations of the participants.

## 6. Promising Directions and Recommendations

a. Without diminishing attention to current A.I.D. vocational education efforts involving PVO and local LDC institutions in nonformal education, increased attention should be given to establishing or strengthening technical training institutions that:

- accept participants with little formal schooling;

- are oriented to variable short-cycle, modular training geared to specific clusters of skills needed for selected occupational areas;
- are sponsored and managed by, or in direct linkage with, employing institutions or other commercial establishments;
- are, thus, able to place most trainees in jobs, or to provide them with the start-up tools or credit needed for work in the informal sector;
- involve practicing technicians or craftspersons as instructors;
- can effectively relate to government ministries for effective response to development priorities;
- will undertake or commission longitudinal studies of their trainees and respond to changing social needs;
- partially offset expenses through pro-rated future earnings of participants, in-kind production, or other related means.

Rationale:

- The task of specifically relating education to the employment of a growing economy should be increasingly assumed by part-time or short-term training schemes conducted through technical training institutes or other nonformal means rather than through formal schooling.
- Technical training institutes linked to on-the-job training can be more or less cost effective than formal vocational schooling, depending on a complex of variables (e.g., the skill category, size of the learning group, cost of equipment, methodology).
- Short-cycle training schemes with apprenticeships can, under certain conditions, substitute for formal vocational schooling at the secondary level and achieve similar or greater economic benefits for the individual participants and for the society.<sup>5</sup>

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<sup>5</sup>Corvalon-Vasquez, p. 94

- Such adaptive institutes may be able to combine the best features of both formal vocational schools and ad hoc nonformal programs to provide a systematic, timely and quality response to changing development needs and also serve recurrent training needs throughout an individual's lifetime.
- Collaborating with government entities (e.g., Ministries of Labor and Education), such institutes can readily respond to changing employment trends, and provide training in skill clusters thereby countering overspecialization and enabling transfer into labor-short areas.

b. The LDC-based industrial sector rather than the schooling system should be encouraged to take on a greater role in funding and operation of technical training institutes.

Rationale:

- Such an approach has been undertaken, with mixed results, in various Latin American countries (see Appendix E) as well as in the U.S. (A study should be made in order to synthesize findings from these and related experiences and to make recommendations for an A.I.D.-supported project to pilot new experimental model(s) involving the private sector in the design and operation of vocational training cum employment. Such a study should also identify a series of hypotheses regarding critical features and enabling conditions to be established and monitored in the pilot project.)
- Education now consumes 15 - 25 percent of LDC budgets with less than half going to primary education which tends to be under-funded. It is conventional wisdom that putting more than 20 percent of the national budget into public education will begin to detract from the needs of other sectors and services.
- It is unreasonable to expect the education sector to assume additional costs for specialized vocational training, or to carry the locus of responsibility for training personnel for the techno-economic sector.
- It has been found inefficient to rely heavily on schools over the workplace and short-term training institutions to develop vocational skills.
- School vocational programs find it difficult to achieve a proper balance between general pre-employment education and training and the provision of specialized, employable skills.

- School vocational programs in LDCs are often too slow to detect and respond to the economy's changing needs.
- School vocational programs have low prestige where competition for higher education is strong.

c. Alternative education and training schemes and U.S. experiences with collaboration among industry, education, and government in the area of short-cycle vocational training should be examined for potential relevance to LDC contexts.

- Community colleges have often been successful in linking education to jobs. While the community college model may be inappropriate for in toto transfer into LDC contexts, for reasons already outlined, certain features of the model might be abstracted for application. These might include the use of advisory bodies of community leaders and employers from the public and private sectors; the employment of practicing technicians, craftspersons, and professionals as part-time instructors; soliciting local employers to receive students in apprenticeship roles, and fostering collaboration between employers and instructors in designing vocational programs and in assessing the education and training received.
- "Open universities" in some industrialized countries have, in many cases, been successful in extending general and pre-vocational education to those outside of formal universities. Features developed in such models, which might be appropriated for use in selected LDC contexts, include relatively open admission of students for particular courses of study (if not for degree candidacy); modularized, self-instructional materials, sometimes supported by radio or television broadcasts; and correspondence schemes for inquiry and feedback with instructors.

d. U.S. experiences with short cycle training programs which are experientially based and aided by multi-media learning tools should be selectively drawn upon in the design of vocational training models. Such media and instructional strategies should be chosen and implemented in culturally appropriate ways.

## 7. Programmatic/Project Considerations

a. Vocational education and training schemes are found most successful when:

- functional, serving well-defined target groups and responsive to their aspirations and to economic realities;
- serving as that part of a total education delivery system which is recurring and responsive to changing social and economic needs, new technologies and patterns of distribution;
- quality instruction has been provided for a cluster of core, technical skills and understandings with broad applicability (some consider this prevocational education);
- the development of occupationally specialized skills follows such foundational training and is achieved through short-term, accelerated training courses coupled with on-the-job training or other structured, practical experience.
- coordination exists with potential (better, actual) employers;
- training components are attached to actual projects or productions rather than to abstract situations;
- they are directly tied to employment needs and opportunities (countering the assumption that the economy will expand to accommodate trained personnel);
- provisions exist for alterability;
- they are of the briefest feasible time duration;
- based on low per capita or per instructional unit cost;
- oriented to skills addressing immediate basic needs -- e.g., economic, social, health-related.

b. Comprehensive secondary schools offering vocational education are found more functional for societies at more advanced stages of development. Such schools:

- are relatively expensive to operate owing to costs of maintaining latest or most appropriate equipment and keeping instructors up-to-date;

- can nevertheless be cost-efficient regarding large lot equipment purchases, optimal use of space and time of instructors;
- are less relevant in countries with low school enrollments and where social status and reward is sharply skewed toward traditional academic schooling;
- are capable of producing a large number of graduates with relatively uniform, centrally-controlled training;
- through centrally controlled certification can increase the theoretical transferability of employees to employers where needs are greatest (In actuality, such transferability is seldom achieved in LDCs for social, economic, and cultural reasons.);
- usually are less able than on-the-job vocational training schemes to respond to individuals' differential rates of progress;
- have a lengthy tooling-up phase, less flexible curricula, with limited checks on changing needs and possible oversupply;
- tend to be staffed by teachers familiar with formal classroom pedagogy but not with participatory and experiential methodologies of learning.

c. Model vocational training schemes should be replicable, economically and organizationally, and draw upon existing facilities and resources. Ideally, they should be recurrent in design, encouraging employers to promote short-term or part-time, task-oriented training at intervals throughout a person's working life.

## 8. Summary and Suggested Next Steps

Preliminary assessment of vocational education and training for developing countries has led to the identification of several critical problem areas, within which some conventional wisdom is emerging. Several of these areas are summarized below:

### a. Human resource development broadly considered

Technical and vocational education needs to be viewed in the overall context of lifelong human resource development (HRD). Optimally, this means the fostering in individuals of three particular attributes or qualities needed for managing change and development

(discussed by Bowman, 1980): adaptability and knowing how to learn, ingenuity in the creation of new opportunities and new ways of thinking about and doing things, and efficiency in acquiring information and in its interpretation for allocative decisions. Hence, the need to recognize that we are "educating people, not producing skill packages to be employed and deployed" in set ways over a lifetime. (p. 8)

Yet, this persisting theme implies some difficult choices concerning vocational education:

- Given the desire of firms to train in skills to increase productivity primarily within their own firm, rather than to increase the employability of individuals for another firm, what training designs are suggested and how can these be tailored to broader HRD needs of the society? (Consider the Japanese case in which, for many employees, there is a lifetime commitment with a single firm which, in turn, has strong incentive to upgrade its employees. Contrast this with the case of some LDC-based firms wishing to train only in isolated, or firm-specific skills not sufficiently transferable to another employer.)

- Which vocational education and training models and investments have the greatest potential for maximizing societal, rather than merely individual firm, productivity--and at what level of investment? (I.e., so that an adequate knowledge and technical base exists among the population to launch further innovation.)

- What innovations in the organization and management of work are culturally adaptable to LDCs to yield greater worker participation and, thereby, greater productivity?

b. Macro-structural or external efficiencies

The linking of vocational and technical education to societal needs and to actual employment opportunities is essential to efficient investment of LDC resources. The absence of this linkage is the chief single factor in the negative assessment of training schemes to date. At the same time, job creation through increased productivity is at the heart of a dynamic economy. At the outset, the question must be posed as to how to determine the skills needed for further economic development. Implied is the need for

- greater involvement of employers in assessing future needs, and in the design, implementation and assessment of vocational education programs;
- short-cycle programs to address evolving employment needs in a timely and efficient manner;

- some form of private sector financial sponsorship of training programs (e.g., through a small payroll tax for public programs, or through provision of training programs in the firm, or through technical institutes);
  - more effective linkage of training to existing, or anticipated jobs with specific employers;
  - tying skill learning or upgrading to greater productivity, the fruits of which are distributed broadly to create more effective demand for the goods and services.
- c. Micro-qualitative or internal efficiencies

A substantial body of literature and experience is being built concerning the most effective and most efficient means through which to develop the vocational skills needed.

A variety of lessons are already documented in the literature concerning other ingredients key to internally efficient operation of vocational education schemes, including project goals, design, instructors, participants, pedagogy and modes of learning, incentives, duration, and so forth, although these seem nowhere comprehensively synthesized.

This preliminary assessment has revealed several patterns in A.I.D. funding for vocational education, while also pointing to key factors related to both the external and the internal efficiency of programs. It has further revealed severe deficiencies in use of the schooling model for job specific training. The assessment is not in great enough depth, however, for us to have confidence that all critical variables have been identified. If there is thought by the Agency to commit major funding toward increasingly effective vocational education in LDCs, then a more comprehensive and critical study is needed to enable us to proceed with those models in which we have the most confidence.

Specifically, it is recommended that S&T:

- a. Draft, and award on competitive merit, a project to synthesize state-of-the-art knowledge about short-cycle, occupationally-specific vocational education and training for LDCs, which is (partially) sponsored and conducted by, or coordinated with, the private sector.

- The study will include consideration of functions, dysfunctions, critical variables (actors, linkages, products of exchange) and enabling conditions associated with particular models of vocational education and training involving private sector entities.
- The study will then yield a set of operational hypotheses regarding critical variables for project efficiency in terms of both macro (structural) and micro (quality) levels. In other words, while the study will consider the merits of alternative instructional technologies and other qualities of the training process, it will take a broader, more integrated view of the macro-structural factors influencing the design and operation of a vocational training model
- Weighting, inasmuch as feasible, will be given to these hypotheses, in terms of over-riding importance, in order to enable recommendations about future programming and funding.
- The study will also include a comparative analysis of costs per trainee, and a comparative analysis of placement ratios.

b. Stemming from the above study, design, pilot and assess selected model(s) of short cycle vocational training institutes or schemes effectively integrated within LDC societies.

APPENDIX A: ILLUSTRATIVE A.I.D. PROJECTS  
ON  
VOCATIONAL EDUCATION

## EXAMPLES OF PROJECTS CONCERNING VOCATIONAL EDUCATION

### AS IT RELATES TO INDUSTRIAL AND INFORMAL SECTORS

(JMC, 5/21/82)

In 1980 a project was undertaken in Egypt to upgrade the skills of vehicle (bus and truck) maintenance workers.

From 1978-1981 a project in Lebanon sought to replace the pool of construction workers by training youth in skilled and semi-skilled building trades.

In Jordan a project from 1979-1980, sought to increase the number of skilled manual laborers in Jordan's domestic labor force and to upgrade the skills of young workers including women, from lower-income families.

A project in Afghanistan, 1954-1975, provided technical support to upgrade the national vocational education system, to better prepare students to enter the job market.

A project from 1969 to 1974 in Pakistan was conducted to improve scientific, technical and vocational education at all levels.

In Korea a project was initiated in 1972 to expand the enrollment and employability of students at Chung Soo Vocational Training Institute.

A non-formal vocational education project in Thailand, currently in operation, has written and tested fifteen courses, formed learning groups of settler trainees, staffed mobile teams of instructors, and begun the first annual training schedule.

A long-term project, 1964-1977, in Thailand, trained out-of-school youth and adults in technical and management areas.

Another project in Thailand, 1966-1975, provided technical assistance to improve and expand trade and industry and agricultural education institutions in Thailand.

An eight-year project in Brazil sought to improve industrial training institutions in northeast Brazil.

In 1975 in Colombia, a project was begun to increase the number of well-qualified teachers, particularly in the vocational and technical areas.

A project in Ecuador, 1980-1981, sought to increase the availability of vocational training for educationally and socially disadvantaged children and youth.

In El Salvador, a project from 1978-1981 was undertaken to improve the basic and occupational skills of poor people.

A project in Haiti, 1980-1983, aims to train semi-professional technicians needed to implement rural development projects.

A project begun in 1974 in Panama sought to develop a practical model for the first cycle of vocational education which would also serve for a training center.

Another project in Panama, 1976-1978, was designed to expand the capacity of the formal education system to provide middle-level manpower in industrial/technical fields.

A project grant to Paraguay was initiated in 1969 to improve the National Apprenticeship Service's capacities to implement a nationwide non-formal educational program oriented to rural illiterate and semi-literate adults.

Also in Paraguay, a project was undertaken, 1977-1978, to strengthen a vocational training program for disadvantaged and low-income persons.

In Peru a project begun in 1978 provided workshops in job-related areas for youth and adults of both sexes.

A project in Jamaica, 1978-1981, sought to establish an integrated and improved manpower development and utilization system.

A grant and loan to the Caribbean Development Bank, 1979-1981, aimed to expand employment opportunities in eight countries through public works construction and basic skills training.

A project in Caracas, Venezuela, 1971-1974, aimed to design, implement, and evaluate a model vocational guidance, training, and placement service for 200 barrio youth (boys, ages 16-25).

In Djibouti, a project begun in 1980 sought to upgrade vocational education programs for unemployed adolescents and inadequately trained administrative support personnel.

A project begun in 1978 in Morocco aimed to integrate women trainees into the Labor Ministry's industrial and commercial training centers and to prepare them with marketable skills and assist in job placement.

Another project in Morocco, 1980-1984, seeks to improve the quality and range of skill training opportunities for low-income Moroccan youth.

In Nigeria, a project from 1970-1975, through the Opportunities Industrialization Center (OIC) aimed to show that the OIC method, compared to existing education/training programs, could effectively mobilize community resources to develop the job potential of needful persons and to reduce the shortage of intermediate-level skilled manpower.

A project in Tanzania, 1976-1979, aimed to develop a replicable method of training rural persons in vocational skills.

In Lesotho, a long-term project, 1977-1983, seeks to expand the capacity of the division of extra mural services of the University of Lesotho to bring technical/vocational education to the people through post-secondary, adult education programs.

A project in Ethiopia, 1973-1976, aimed to develop alternative vocational and technical training programs in the private sector relevant to that country's needs.

A project in Liberia, 1978-1982, has sought to restructure a secondary vocational program to produce employable graduates at affordable costs for certain middle level manpower requirements.

In Senegal, a project from 1979 to 1981 was undertaken to establish an integrated and decentralized system of non-formal vocational training services enabling youth (men and women, ages 18-30) to acquire marketable technical skills, and to help with job placement or participation in employment-generating activities.

A project in Rwanda, 1977-1982, has aimed to extend and improve rural post-primary education for boys and girls through Integrated Rural and Artisan Learning Centers.

A long-term project, begun in 1975 through Opportunities Industrialization Centers, has sought to plan, implement, and evaluate non-formal employment and training programs and small-scale enterprises for selected LDCs.

EXAMPLES OF PROJECTS CONCERNING VOCATIONAL EDUCATION AS IT RELATES  
TO AGRICULTURE {F. Method memo 2/82}

Yemen: The Government of Yemen is developing its agriculture education program with U.S. technical assistance following the model of U.S. practical based vocational agriculture education. The Ibb Secondary Agricultural Institute (ISAI) is Yemen's first vocational agriculture high school. The facilities were built with a loan from the IBRD; the Yemen Government and IBRD asked USAID to provide technical assistance for operation of the school, for which purpose AID began a project in September 1979. AID has been asked to develop Yemen's second agriculture high school and a vocational livestock school.

Egypt: An Agricultural Mechanization project in Egypt will be providing vocational training in machinery operation as part of the overall program. The project team is working closely with the Egyptian Extension Service and the Agricultural Bank to increase farmer understanding of and access to mechanical equipment.

Liberia: AID is approaching the final year of a five-year project to help restructure the Booker T. Washington Agriculture and Industrial Institute's four-year program to a job-oriented three-year curriculum.

Kenya: Egerton College of Agriculture is being helped to expand from 700 to 1600 places. Egerton is Kenya's main training center for extension personnel and for agriculture teachers for primary and secondary schools.

Togo and Gambia: AID is providing support through Opportunities Industrialization Centers International (OICI) to set up training centers to train young village farmers and extension workers.

Niger: The Rural Sector Human Resources project supports the Practical Institute for Rural Development at Kolo, Niger's major educational facility for training rural development personnel.

Cameroon: AID is providing support for centers for training farm families in production practices, as well as for the expansion of the agricultural faculty for degree training at the university level.

Rwanda: AID has a Farm Hand Tools project which provides blacksmith training in metal working skills for making and maintaining farm tools and equipment. AID also supports 10 rural training centers and two agriculture schools.

Mali: AID is providing support to national agriculture programs through expansion and improvement of agriculture apprenticeship centers to train middle level agricultural officers.

Malawi: AID is supporting upgrading the Bunda College of Agriculture and a program at the Malawi Polytechnic for the training of irrigation technicians.

Mauritania: An AID-supported Agriculture Human Resources Development project will provide training to rural development workers in extension and adaptive research.

Sudan: The Southern Manpower Training project will improve rural training institutions to meet agriculture training at all levels, including forestry training.

Morocco: AID is developing a network of training facilities to train Moroccan women for existing employment opportunities.

Tanzania: AID's Agricultural Education and Extension project provides in-service training for agricultural operational and technical personnel.

Upper Volta: The Agriculture Human Resources project supports training centers for middle and upper level agriculture technicians and extension workers.

Bolivia: A Small Farm Organization project will strengthen the National Campesino Training Center (NCDS) which provides training to campesino leaders in cooperative development, leadership, operations, and management, and in traditional areas of community leadership and vocational skills. The Agriculture Sector I project provides extensive agriculture-oriented adult education and training programs in production and marketing technology.

Ecuador: The Rural Technology Transfer System project trains rural youth (4-F Clubs similar to U.S. 4-H) ages 14-25 in practical agriculture activities such as bee-keeping and rabbit raising.

El Salvador: The small farm natural resources management project trains farm leaders and government extension agents in short courses in soil and water conservation.

Haiti: A Resources Training Center is providing technical support to development projects for on-the-job training and upgrading of skilled and semi-skilled technicians.

Honduras: Two projects -- Rural Technologies and Small farm technologies -- are providing a variety of agriculture-related training to small farmers.

Paraguay: A Minifundia Crop Intensification project provides on-the-job training and short courses for both technicians and small farmers who will be involved in the production, processing, and marketing of selected fruits and vegetables grown in the minifundia zones.

Caribbean Regional: The Caribbean Agriculture Extension project has an extensive training component involving both degree training and in-service training in agricultural communication, extension methods workshops, women-in-development workshops, and subregional farming systems workshops. Regional rural youth workshops will concentrate on the organization

Indonesia: Under Title XII, AID is supporting the Graduate School of Agriculture at Bogor as well as agriculture Colleges in the Eastern and Western Islands. It also supports a program of agriculture education at the University of Hasanuddin.

Nepal: AID is working to upgrade and expand the Institute of Agriculture and Animal Sciences.

Philippines: AID is supporting a program of agricultural education outreach through the strengthening of seven small agricultural colleges. A related project supports a network of rural service centers providing support for community education and skill development.

Sri Lanka: AID is strengthening the post-graduate Institute of Agriculture at the University of Sri Lanka.

Thailand: AID is supporting community-based practical education in the Hill Area of Northern Thailand.

APPENDIX B: AN ANALYSIS OF SELECTED A.I.D.  
PROJECTS CONCERNING VOCATIONAL EDUCATION,  
OPERATING IN OR SINCE 1974

## AN ANALYSIS OF SELECTED A.I.D. PROJECTS CONCERNING VOCATIONAL

## EDUCATION, OPERATING IN OR SINCE 1974

Project	Country/ Bureau	FY'S	Budget -Ks (Actual or est)	Sector Orientation	Institutional Locus	Population	Subject of Education or Training
Vehicle Maintenance Training	Egypt 2630114	80	4,500 ES	Urban	Non-school. Natl transportation labor union train- ing center	Instructors of bus & truck maintenance (for 200-540 mechanics annually)	Heavy vehicle maintenance
Vocational Training	Jordan 2780238	79-80	2,125 ES	Urban	Non school: trade training center	Manual laborers Youth incl. F	
Technical Ed: Afghan Institute of Technology	Afghanistan 2780238	56-72	13,124 FN	Urban	School	Mid-level technicians	7 technical disciplines
Vocational Training Program - YMCA - PVO	Lebanon 2680309	78-81	1,300 SA 840 ME	Urban	Non-school	Mostly youth-unskilled & unemployed M (3320 total)	Building/construction trades
Teacher and technical education	Nepal 3670060	54-75	4,458	Urban/ rural	School	Teachers-all levels	Pre-vocational education
Rural education	Thailand 4930162	64-77	177 EH 8,108 SA	Rural	Non-school	Thai teachers for 4,000 out-of-school youth & adults	Domestic and modern fields

Market Orientation	Pedagogy	Contractor	Public or Private Sector	Income-Gen. or Employment Component	Evaluation
Industrial	Short courses	U.S	Public	Yes	NA - - -
Industrial	Modular training	Vocational Training Corp (semi-auton. GOJ agency)	Public	No	NA - - -
Industrial	Courses/some on-job	U.S. University	Public (MOE)	No	Pos: Participant training in agriculture. Neg: Weak MOE commitment. Weak host country leadership lack of professional technicians & qualified students. Poor management systems. Frequent changes in contractor's top personnel.
Informal sector/ industrial	Courses and on-job	YMCA	Private/public	No	Pos: 84% found employment after training. Neg: Focus on only few skills - no female participants. 30% dropout (for employment or bec. of farm/family pressures)
?	New curricular Materials	U.S. University & NEA	Public Public	No	Pos: Expansion of enrollment. Production and distribution of textbooks. Neg: Insufficient vocational training. Lack of employment incentives. Students use system as spring-board to college.
Informal sector/ industrial	Mobile trade training schools (MTTS)		Public	No	Pos: Viable alternative to traditional apprenticeship system. Half MTTSs still operating in 1981: many others absorbed into broader nonformal ed. system of lifelong education centers modelled on the MTTSs.

Project	Country/ Bureau	FY's	Budget - KS (Actual or est)	Sector Orientation	Institutional Locus	Population	Subject of Education or Training
Technical Training for accelerated development	Thailand 4930163	64-77	59,273 SA 4,348 FN	Non-school	Out-of-school youth & adults	?	Technical & management areas
Vocational Ed. Improvement of voca- tional agriculture	Thailand 4930194	66-75	3,574 SA	Rural	School	Thai personnel for administration & instructional positions	Agricultural, trade
Vocational Ed- Employment Generation	Ecuador 5180001	78-79	256 EH	Urban		Boys and their families	Mechanics/construction
Basic & occupational skills training	El Salvador 5190172	78-81	500 EH	Urban/rural	School/non- school	Unskilled rural & urban youth & adults	Mechanics/construction/ tailoring
Education Sector (Phase II)	Panama 5250179	76-78	(loan) 13,500 EH	Urban	School	Vocation Ed. teachers; rural & urban students	Industrial/technical
Education Development Program	Paraguay 5260095	69-70	(loan) 4,190 AL 1,519 EH 2,753 FN	Urban/rural	School	Teachers/students	Agriculture, home ec., shop, basic science

Market Orientation	Pedagogy	Contractor	Public or Private Sector	Income-Gen. or Employment Component	Evaluation
(?)	Training center established at Northeast Technical Institute	-	Public/private	No	Pos: - - - - Neg: Salary levels of Thai training staff inadequate to compete with private sector. Impractical to develop and retain on payroll large competent training staff for few clients.
Rural	Demonstration/farm shop equipment/curriculum mats		Public	No	Pos: - - - - Neg: Farm Mechanics Program in the schools not keeping pace with farm mechanization of Thailand.
Industrial/informal sector	Learning with production		Public	Some	Pos: - - - - Neg: Lower enrollment than expected. Poor job placement following training. "Socio-economic obstacles" to girls' training.
Industrial/informal sector	Skills training courses	U.S. University	Public	No	Pos: Students enrolled in MOE's Occupational Skills Training Program tripled and retention rate improved 46 to 54%. Relevance of OST courses to jobs. Neg" Inadequate (size & quality) of staff. Trade Advisory Council network needs development and better linkages with schools. Inadequate physical facilities & equipment.
Industrial	Skills training courses; workshops; competency-based curriculum		Public	No	Pos: Curriculum materials. Retrained twice as many primary & secondary teachers as planned. Neg: Project management difficulties. Construction delays.
(?)	New curricula	U.S. direct hire	Public	No	Pos: Vocational agriculture education & teacher training. Neg: MOE leadership in Ag-industrial education poor. Delays in construction. USAID commodities via GSA two years late. Many students not suited for vocational-agricultural training, leading to over-taxing of facilities. Language problems.

Project	Country/ Bureau	FY's	Budget - KS (Actual or est)	Sector Orientation	Institutional Locus	Population	Subject of Education or Training
Rural non-formal ed:	Paraguay 5260501	69-70	1,519 EH	Rural	Non-school	Staff of National Apprenticeship Service (SNPP) working with 2572 semi-literate adult farmers	Home management, livestock, poultry, basic ag, small farm development
Community Services (OPG)	Paraguay 5260506	77-78	120 EH	Urban/rural	Non-school	Staff of National Council of Philanthropic Organizations, working with disadvantaged and handicapped, mostly women	Planning, administering, self-help projects.
Vocational Institute (OPG)	Paraguay 5260507	77	96 EH	Urban	School	Students from poor sector	Technical skills
Vocational Training- Pueblos Jovenes Org.	Peru 5270181	78-79	200 EH	Urban	School/non-school	Urban slum dwellers-youth and adults	Technical, commercial & domestic skills
Rural development sector (loan)	Jamaica 5320009	76-78	11,200 EH	Rural	School/non-school	Ag teachers; secondary students; farmers and ag workers	Ag; home ec., farm management

Market Orientation	Pedagogy	Contractor	Public or Private Sector	Income-Gen. or Employment Component	Evaluation
Rural farm	Courses & demonstration	-	Public	No	Pos: Project staff and new constructional materials. Increases in productivity of participants. 60% of participants adopted new practices. Neg: SNPP failed to produce planning and budgeting guide to expand program to national scale. Language problems.
Informal sector	22 skills training workshops		Public	No	Pos: All project outputs equalled or exceeded. 790 disadvantaged or handicapped women benefitted through new income-producing activities. 70% of training workshops self-financing. Training skills geared to local economy. Neg: - - - -
Industrial	Vocational training courses & shop work	-	-	No	Pos: 300 enrolled in 1980. 90% of grads working in fields for which trained & in demand in industrial sector. Neg: - - - -
Industrial/informal sector	30 technical workshops	Peruvian PVO	Public	No	Pos: Support from slum residents in providing construction & educational materials. Host government provision of instructors. Resourceful, productive students. Model for combining Voc. ed with traditional secondary school curriculum. Neg: Fewer enrolled than expected (6,600 in 1980 vs. 10,500 targeted), owing to late starts of some workshops. Adult program had more difficulties than youth program in obtaining instructors & maintaining regular participation. More assistance to help in job seeking.
Rural	Courses; containing ed. centers	-	Public	No	Pos: New prestige to agriculture as career choice. Agriculture outreach program established. Morale of teachers, boosted through training. Neg: Lack of personnel & unrealistic timelines.

Project	Country/ Bureau	FY's	Budget - KS (Actual or est)	Sector Orientation	Institutional Locus	Population	Subject of Education or Training
Manpower planning, Training, Employment	Jamaica 5320047	78-81	160 SA	Urban	School/non-sch school	National Planning Ag staff	Manpower planning
Opportunities Indus- trialization Centers	Nigeria 16200802 Ghana, etc.	70-75	1,780 EH	Urban	Non-school	Unemployed out-of- school youth	Prevocational and technical/mechanical/ commercial
Opportunities Industrial Centers	Nigeria, Ghana, Togo	75-78	-	Urban	Non-school	Unemployed youth	Prevocational and technical
Comprehensive secondary schools	Ethiopia 6630135	62-75	1,515	-	School	Secondary statts	Prevocational, participants
Vocational Training	Liberia 6690131	62-75	5,954 EH	Urban	School	Secondary students at BW Institute	Prevocational
Integrated Youth	Senegal 6850222	79-81	1,758 SH	Urban	Non-school	Out-of-school youth	Construction/mechanics/ electricity/textiles
Seguenega Integrated Rural Development	Upper Volta 6860231	78-82 75	1,000 FN 4,956 SH	Rural	Non-school	Young farmers	Vocational and function al ed - relevant to area needs
Farm hand tools	Rwanda 6960103	77-80	240 FN	Rural	Non-school	-	Blacksmith technology

Market Orientation	Pedagogy	Contractor	Public or Private Sector	Income-Gen. or Employment Component	Evaluation
Industrial/informal sector	-	-	Public/private	No	N/A
Industrial/informal sector	-	U.S.-firm	Public/private	No	Pos: Grads stay on jobs and perform as well or better than grads from other VOC institutions. Some course innovations (individualized instruction) Neg: Poor placement of trainees. Poor central office accounting & records management. Lack of private sector support. Inappropriate replication of model for U.S. cities.
Industrial/informal sector	-	-	Public/private	No	Pos: Nearly 100% placement of trainees. Sound record-keeping system. Administrative staff quality and communications greatly improved. Feasibility & demand surveys employed. Improved relationships with educators and employers resulting in more job openings. Neg: Planning and projections.
Industrial/informal sector	Courses	-	Public	No	N/A
Industrial/informal	Job-oriented courses	U.S. University	Public	No	Pos: - - - Neg: Little substantive progress after 2 years. Contractual problems. Contractor could not fill many field positions.
Industrial	Courses and on-the-job	YMCA	Private/public	No	N/A
Rural	Training Center	AFRICARE	-	No	N/A
Rural/informal sector	Training Center	-	Public	No	Pos: - - - Neg: Environmental impact study did not anticipate effect of destroying trees to obtain charcoal as the forge's energy source. No assurance forge will continue to be used for training vs. commercial purposes after AID assistance ends. Late arrival of project equipment. Broken leg of forge director.

APPENDIX C: UNESCO REVISED RECOMMENDATIONS  
CONCERNING TECHNICAL AND VOCATIONAL EDUCATION

Unesco, in its eighteenth session, adopted the following Revised Recommendation Concerning Technical and Vocational Education:

### Revised Recommendation concerning Technical and Vocational Education<sup>1</sup>

The General Conference of the United Nations Educational, Scientific and Cultural Organization, meeting in Paris, at its eighteenth session, held from 17 October to 23 November 1974,

*Recalling* the constitutional responsibilities of the Organization for the promotion of education,

*Recognizing* that technical and vocational education have to contribute to the maintenance of peace and friendly understanding between the various nations,

*Considering* that education must now be seen as a lifelong process,

*Recognizing* that technical and vocational education is a prerequisite for sustaining the complex structure of modern civilization and economic and social development,

*Recalling* the principles set forth in Articles 23 and 26 of the Universal Declaration of Human Rights guaranteeing all the right to work and to education,

*Considering* therefore that all have a right to an education enabling full participation in contemporary society,

*Taking* into account the diversity of education systems throughout the world, as well as the particular and urgent needs of developing countries,

*Considering* that in spite of this diversity similar goals are pursued and similar questions and problems arise in all countries concerning technical and vocational education and that therefore common standards and measures are called for,

*Having* adopted for this purpose at its twelfth session the Recommendation concerning Technical and Vocational Education,

*Recognizing* however that the rapid technological and educational changes of the last decade require new, creative, and efficient efforts in technical and vocational education to improve education as a whole for social, economic and cultural development,

*Having* decided at its seventeenth session that in view of these changes this Recommendation should be revised in order to better serve Member States,

1. Adopted by the General Conference of Unesco at its eighteenth session, Paris, 19 November 1974.

Noting that the International Labour Conference has adopted, over the years, a number of instruments dealing with various aspects of vocational guidance and vocational training and, in particular, the Vocational Guidance Recommendation, 1949, the Vocational Training (Agriculture) Recommendation, 1956, and the Vocational Training Recommendation, 1962, and that the Conference, at its 59th session, had adopted substantive conclusions with a view to adoption, in 1975, of a new instrument or instruments on vocational guidance and vocational training,

Noting further the close collaboration between Unesco and the International Labour Organisation (ILO) in drawing up their respective instruments so that they pursue harmonious objectives, avoiding duplication and conflict, and with a view to continued collaboration for effective implementation of the two instruments,

Adopts this Recommendation this nineteenth day of November 1974,

*The General Conference* recommends that when developing and improving technical and vocational education, Member States should apply the following provisions by taking whatever legislative or other steps may be required to give effect, within their respective territories, to the principles set forth in this Recommendation,

*The General Conference* recommends that Member States should bring this Recommendation to the knowledge of the authorities and bodies concerned with technical and vocational education,

*The General Conference* recommends that Member States should report to it, at such times and in such manner as shall be determined by it, on the action they have taken to give effect to the Recommendation.

#### L. Scope

1. This Recommendation applies to all forms and aspects of education which are technical and vocational in nature provided either in educational institutions or under their authority, directly by public authorities, or through other forms of organized education, public or private.
2. For the purposes of this Recommendation: 'technical and vocational education' is used as a comprehensive term referring to those aspects of the educational process involving, in addition to general education, the study of technologies and related sciences and the acquisition of practical skills, attitudes, understanding and knowledge relating to occupations in various sectors of economic and social life. Technical and vocational education is further understood to be:
  - (a) an integral part of general education;
  - (b) a means of preparing for an occupational field;
  - (c) an aspect of continuing education.
3. Technical and vocational education, being part of the total educational process, is included in the term 'education' as defined in the Convention and Recommendation against Discrimination in Education adopted by the General Conference of the United Nations Educational, Scientific and Cultural Organization at its eleventh session and the provisions of that Convention and Recommendation are therefore applicable to it.
4. This recommendation should be understood as setting forth general prin-

ciples, goals and guidelines to be applied by each individual country according to needs and resources. The application of the provisions in their particulars and the timing of the implementation will therefore depend upon the conditions existing in a given country.

**II. Technical and vocational education  
in relation to the educational process : objectives**

5. Given immense scientific and technological development, either in progress or envisaged, which characterizes the present era, technical and vocational education should be a vital aspect of the educational process and in particular should :
  - (a) contribute to the achievement of society's goals of greater democratization and social, cultural and economic development, while at the same time developing the potential of individuals for active participation in the establishment and implementation of these goals;
  - (b) lead to an understanding of the scientific and technological aspects of contemporary civilization in such a way that men comprehend their environment and are capable of acting upon it while taking a critical view of the social, political and environmental implications of scientific and technological change.
6. Given the necessity for new relationships between education, working life, and the community as a whole, technical and vocational education should exist as part of a system of lifelong education adapted to the needs of each particular country. This system should be directed to :
  - (a) abolishing barriers between levels and areas of education, between education and employment, and between school and society through :
    - (i) the integration of technical and vocational and general education in all educational streams above primary level; (ii) the creation of open and flexible educational structures; (iii) the taking into account of individuals' educational needs and of the evolution of occupations and jobs;
  - (b) improving the quality of life by permitting the individual to expand his intellectual horizons and to acquire and to constantly improve professional skills and knowledge while allowing society to utilize the fruits of economic and technological change for the general welfare.
7. Technical and vocational education should begin with a broad basic vocational education, thus facilitating horizontal and vertical articulation within the education system and between school and employment thus contributing to the elimination of all forms of discrimination and should be designed so that it :
  - (a) is an integral part of everyone's basic general education in the form of initiation to technology and to the world of work;
  - (b) may be freely and positively chosen as the means by which one develops talents, interests and skills leading to an occupation in the sectors listed in paragraph 2 or to further education;
  - (c) allows access to other aspects and areas of education at all levels by being grounded on a solid general education and, as a result of the integration mentioned in paragraph 6(a), containing a general education component through all stages of specialization:

## Appendixes

- (d) allows transfers from one field to another within technical and vocational education;
  - (e) is readily available to all and for all appropriate types of specialization, within and outside formal education systems, and in conjunction or in parallel with training in order to permit educational, career and job mobility at a minimum age at which the general basic education is considered to have been acquired, according to the education system in force in each country;
  - (f) is available on the above terms and on a basis of equality to women as well as men;
  - (g) is available to disadvantaged and handicapped persons in special forms adapted to their needs in order to integrate them more easily into society.
8. In terms of the needs and aspirations of individuals, technical and vocational education should :
- (a) permit the harmonious development of personality and character and foster the spiritual and human values, the capacity for understanding, judgement, critical thinking and self-expression;
  - (b) prepare the individual to learn continuously by developing the necessary mental tools, practical skills and attitudes;
  - (c) develop capacities for decision-making and the qualities necessary for active and intelligent participation, teamwork and leadership at work and in the community as a whole.

### III. Policy, planning and administration

9. Policy should be formulated and technical and vocational education administered in support of the general objectives adopted for the educational process as well as for national and, if possible, regional social and economic requirements, and an appropriate legislative and financial framework adopted. Policy should be directed to both the structural and the qualitative improvement of technical and vocational education.
10. Particular attention should be given to planning the development and expansion of technical and vocational education :
- (a) high priority should be placed on technical and vocational education in national development plans as well as in plans for educational reform;
  - (b) planning should be based upon a thorough evaluation of both short-term and long-term needs taking into consideration any variation in needs which may exist within a country;
  - (c) adequate provision for proper current and future allocation of financial resources should be a major element of planning;
  - (d) planning should be done by a responsible body or bodies having authority on the national level. This body should have available to it data which have been collated, analysed, synthesized and interpreted by qualified staff provided with adequate research facilities.
11. Planning should be responsible to national and, if possible, regional, economic and social trends, to projected changes in demand for different classes by goods and services, and for different types of skills and knowledge in such a way that technical and vocational education may easily adapt to the evolving situation be it rural or urban. This planning should also be co-ordinated with current and projected training action and the evolution of employment.

2. While the education authorities should have primary responsibility, the following groups and authorities should be actively associated in policy formulation, and in the planning process. Structures, on both national and local levels, taking the form of public agencies or consultative or advisory bodies, should be created to permit this:
  - (a) public authorities responsible for planning economic and social policy, labour and employment, and for the various occupational sectors (industry, agriculture, commerce);
  - (b) representatives of non-governmental organizations within each occupation sector from among employers and workers;
  - (c) any authority or body, such as a training body or extension services, responsible for out-of-school education and training;
  - (d) representatives of those responsible — both in public education and in State recognized private education — for executing educational policy including teachers, examining bodies and administrators;
  - (e) parent, former pupil, student and youth organizations;
  - (f) representatives from the community at large.
3. Policies for the structural improvement of technical and vocational education should be established within the framework of broad policies designed to implement the principle of lifelong education through the creation of open, flexible and complementary structures for education, training and educational and vocational guidance, regardless of whether these activities take place within the system of formal education or outside it. In this respect consideration should be given to the following:
  - (a) multipurpose secondary education offering diversified curricula including work-study programmes;
  - (b) open tertiary institutions recruiting from a variety of sources and offering programmes ranging from short specialized ones to longer full-time programmes of integrated studies and professional specialization;
  - (c) establishing a system of equivalencies whereby credit is given for completion of any approved programme and recognition is granted educational and professional qualifications achieved through various means.
4. Policy should be directed to ensuring high quality in such a way as to exclude the possibility of any judgement which discriminates between the different educational streams, whatever their ultimate goal. In this respect special efforts should be made to ensure that technical and vocational education in rural areas meets the same standards as that offered in urban ones.
5. In order to ensure quality, responsible national authorities should establish certain criteria and standards, subject to periodic review and evaluation, applying in all aspects of technical and vocational education, including to the extent possible non-formal education for:
  - (a) all forms of recognition of achievement and consequent qualification;
  - (b) staff qualifications;
  - (c) ratios of teaching and training staff to learners;
  - (d) the quality of curricula and teaching materials;
  - (e) safety precautions for all learning environments;
  - (f) physical facilities, building, workshop layouts, quality and type of equipment.
6. Policies should be established fostering research related to technical and

## *Appendixes*

vocational education, with particular emphasis on its potential within lifelong education, and directed to its improvement. This research should be carried out by competent staff on national and institutional levels as well as through individual initiative. To this end :

- (a) special emphasis should be placed on curriculum development, research concerning teaching and learning methods and materials, and where the need exists, on technologies and techniques applied to development problems;
  - (b) financial resources and physical facilities should be made available through institutions of higher education, specialized research institutions and professional organizations for applying the results of this research on an experimental basis in representatively selected institutions for technical and vocational education;
  - (c) channels should be created for the widespread dissemination and rapid application of the positive results of research and experimentation;
  - (d) the effectiveness of technical and vocational education should be evaluated using, among other data, relevant statistics including those concerning part-time enrolments and drop-out rates which are in some cases neglected;
  - (e) particular attention should be given to all research efforts to humanize working conditions.
17. Provision should be made within administrative structures for evaluation, supervisory and accreditation services, staffed by technical and vocational education specialists, to ensure the rapid application of new research findings and to maintain standards :
- (a) evaluation services as a whole should ensure the quality and smooth operation of technical and vocational education by continuous review and action directed to constant improvement of staff, facilities and programmes;
  - (b) supervisory services for the staff should encourage improvement in the quality of teaching by providing guidance and advice and recommending continuing education;
  - (c) all programmes of technical and vocational education, in particular those offered by private bodies, should be subject to approval by the public authorities through some means of accreditation or form of public inspection.
18. Particular attention should be given to the material resources required for technical and vocational education. Priorities should be carefully established with due regard for immediate needs and the probable directions of future expansion and adequate cost controls introduced :
- (a) institutional planning should be directed to ensuring maximum efficiency and flexibility in use;
  - (b) the planning, construction and equipping of facilities should be carried out in collaboration with specialist teachers and educational architects and with due regard for their purpose, prevailing local factors and relevant research;
  - (c) adequate funds should be allocated for recurrent expenditure for supplies and maintenance and repair of equipment.

1. Technical and vocational aspects of general education

1. An initiation to technology and to the world of work should be an essential component of general education without which this education is incomplete. An understanding of the technological facet of modern culture in both its positive and negative attributes, and an appreciation of work requiring practical skills should thereby be acquired. This initiation should further be a major concern in educational reform and change with a view to greater democratization of education. It should be a required element in the curriculum, beginning in primary education and continuing through the early years of secondary education.
2. Opportunities for general technical and vocational initiation should continue to be available to those who wish to avail themselves of it within the educational system and outside it in places of work or community centres.
3. The technical and vocational initiation in the general education of youth should fulfil the educational requirements of all ranges of interest and ability. It should mainly perform three functions :
  - (a) to enlarge educational horizons by serving as an introduction to the world of work and the world of technology and its products through the exploration of materials, tools, techniques and the process of production, distribution and management as a whole, and to broaden the learning process through practical experience;
  - (b) to orient those with the interest and ability towards technical and vocational education as preparation for an occupational field or towards training outside the formal education system;
  - (c) to promote in those who will leave formal education at whatever level but with no specific occupational aims or skills, attitudes of mind and ways of thought likely to enhance their aptitudes and potential, to facilitate the choice of an occupation and access to a first job, and to permit them to continue their vocational training and personal education.
4. Required general technical and vocational studies in the schools having great importance for the orientation and education of youth programmes, should include a proper balance between theoretical and practical work. A properly structured programme of such studies should be drawn up by the competent authorities in collaboration with the professional community and with those responsible for technical and vocational education. These programmes should :
  - (a) be based upon a problem-solving and experimental approach and involve experience in planning methods and decision-making;
  - (b) introduce the learner to a broad spectrum of technological fields and at the same time to productive work situations;
  - (c) develop a certain command of valuable practical skills such as tool use, repair and maintenance and safety procedures, whether applicable to future education, training and employment or to leisure time, and a respect for their value;
  - (d) develop an appreciation of good design and craftsmanship and the ability to select goods on the basis of their quality;
  - (e) develop the ability to communicate including the use of graphical means;
  - (f) develop the ability to measure and calculate accurately;

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(g) be closely related to the local environment without, however, being limited to it.

23. The technical and vocational initiation in programmes of general educational enrichment for older youth and adults should be directed to enabling those engaged in working life to :
- (a) understand the general implications of technical change, its impact on their professional and private lives, and how man may shape this change;
  - (b) to use practical skills for improving the home and community environment and thus the quality of life and, in appropriate conditions, for productive leisure-time activities.

### V. Technical and vocational education as preparation for an occupational field

24. Given disparities that may exist between formal education, whether secondary or tertiary, and the employment and career opportunities available the highest priority should be given to technical and vocational education which prepares young people to exercise occupations in the sectors covered by this recommendation. Consequently the structure and content of traditional education, whether general or technical and vocational, should be adapted accordingly through :
- (a) the diversification of secondary education in the later stages so that it may be pursued in conjunction with employment or training, or may lead to employment or to higher education, thereby offering to all youth educational options corresponding to their needs;
  - (b) the introduction of new programmes into tertiary education more relevant to the career needs of young adults;
  - (c) the development of educational structures and programmes on all levels centred on organized and flexible interchange between educational institutions including training institutions and those responsible for employment in the various occupational sectors.
25. Technical and vocational education as preparation for an occupational field should provide the foundation for productive and satisfying careers and should :
- (a) lead to the acquisition of broad knowledge and basic skills applicable to a number of occupations within a given field so that the individual is not limited by his education in his freedom of occupational choice and later transfer from one field to another in the course of working life is facilitated;
  - (b) at the same time offer a thorough and specialized preparation for initial employment and effective training within employment;
  - (c) provide the background in terms of skills, knowledge and attitudes, for continuing education at any point in the individual's working life.
26. Premature and narrow specialization should be avoided :
- (a) in principle 15 should be considered the lower age limit for beginning specialization;
  - (b) a period of common studies concerning basic knowledge and skills should be required for each broad occupational sector before a special branch is chosen.

1. Because it is desirable that women seek wider participation in all kinds of occupations outside family and domestic activities, they should have the same educational opportunities available to them as men in order to prepare for an occupation and should be encouraged to take advantage of these through appropriate legislative measures and widespread distribution of information concerning these opportunities.
2. Special provision should be made for out-of-school and unemployed youth and children of migrant workers with the minimum or less of primary education, as well as for those not entering education or training programmes after completion of compulsory schooling, in order that they may acquire employable skills.
3. Given the necessity of integrating the physically and mentally disadvantaged into society and its occupations, the same educational opportunities should be available to them as to the non-handicapped in order that they may achieve qualification for an occupation; special measures or special institutions may be required.

#### *Organization*

1. Technical and vocational education as preparation for an occupational field should be organized on a national or, if possible, regional basis, so as to respond positively to over-all social, economic and educational requirements and to the needs of different groups of the population without discrimination.
2. Several organizational patterns of technical and vocational education, including both full-time and part-time options should exist within each country. The following patterns of organization for example should be considered:
  - (a) full-time including practical training as well as general education, provided in an educational establishment, either comprehensive or specialized;
  - (b) part-time programmes such as the following in which general education and theoretical and broad practical aspects of the occupational field are given in an educational establishment while specialized practical training is acquired during work in the chosen occupation: (i) the day-release system providing for young workers and apprentices to attend an educational establishment at least one day a week and preferably two; (ii) the sandwich system under which periods, in an educational institution alternate with training periods in a factory, farm, business establishment or other undertaking; (iii) the block-release system whereby young workers are released to attend courses for one or two short periods of at least ten to fifteen weeks in total length per year which may be especially adapted to conditions in areas of low population density by provision of boarding facilities.
3. The responsible authorities should encourage part-time education, therefore:
  - (a) these programmes should be available directly after completion of minimum compulsory or required schooling, and should continue to be available to the highest level of formal education;
  - (b) the educational qualifications acquired by this means should be equivalent to those acquired by full-time education;
  - (c) where employers are responsible for the practical training aspect for part-time students, this training should be as broad as possible serving the educational and training needs of the individual, and should meet national standards.

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33. In view of the increasing requirement for highly qualified middle-level manpower in all fields, and the increasing numbers completing secondary education or its equivalent, the development of programmes of technical and vocational education corresponding to further qualifying tertiary education should be given high priority. The following patterns of organization should be considered :
- (a) a period of from one to two years of guided work experience followed by a part-time or briefer full-time programmes of specialization;
  - (b) part-time programmes;
  - (c) full-time programmes as an extension of programmes given in specialized secondary institutions or given in tertiary institutions.
34. The high cost of equipment for the practical component of technical and vocational education requires that this be organized so that benefits received are in proportion to the cost. Consideration should be given to the following as a means of achieving this :
- (a) centralized workshops, or mobile units, could be used to serve several educational institutions;
  - (b) workshops attached to educational institutions could be designed so that they are suitable for use by the community at large particularly for continuing education programmes;
  - (c) although workshops and laboratories in advanced secondary or tertiary institutions should be designed primarily for pedagogical purposes, they might also be equipped and staffed so that equipment for use in technical and vocational studies in general education may be produced.
35. Enterprises should be closely associated in the practical training of those preparing for occupations in their particular sector, and should be encouraged to take responsibility, in co-operation with educational institutions, for the organization of this training.

### *Programme content*

36. All programmes of technical and vocational education as preparation for an occupational field should :
- (a) aim at providing scientific knowledge, technical versatility and the broad skills and knowledge required for rapid adaptation to new ideas and procedures and for steady career development;
  - (b) be based on an analysis of broad occupational requirements worked out for the long term between education authorities including organizations representing educational research and administration and employment authorities and occupational organizations concerned;
  - (c) include a proper balance between general subjects, science and technology, and studies of both the theoretical and practical aspects of the occupational field, with the practical component in all cases related to the theoretical one;
  - (d) stress developing a sense of professional values and responsibilities from the standpoint of human needs.
37. In particular programmes should :
- (a) whenever possible be interdisciplinary in character as many occupations now require knowledge and training in two or more traditional areas of study;

- b) be based on curricula designed around core knowledge and skills;
- c) include studies of the social and economic aspects of the occupational field as a whole;
- d) include the study of at least one foreign language of international use which, while conducive to a higher cultural level, will give special emphasis to the requirements of communication and the acquisition of a scientific and technical vocabulary;
- e) include an introduction to organizational and planning skills;
- f) emphasize instruction in safety procedures relative to the materials and equipment used in a given occupational field and the importance of safe working conditions and the health aspects relative to the occupation as a whole.

While based on the above general principles and components, and thus pursuing in all cases broader educational aims, programmes in their practical aspect should be designed taking into account special occupational requirements with regard to the particular executive, organizational, analytical and practical skills required.

Technical and vocational education programmes leading to university qualification, while encouraging research and offering high-level specialization, should be developed with particular attention to :

- (a) the inclusion of components directed to developing attitudes whereby those with broad responsibilities in technological fields constantly relate their professional tasks to larger human goals;
- (b) relating more closely higher technical and vocational education for the industrial and agricultural sectors to the requirements of these sectors. In this regard consideration should be given to creating within tertiary institutions, centres for the testing and certification of industrial and agricultural products, supervised by the public authorities and serving both educational and research purposes.

Programmes of technical and vocational education as preparation for occupations within the agricultural sector should be designed in accordance with the over-all social and economic requirements of rural development. Therefore :

- (a) both general aspects and the technical and vocational aspects, while adapted in terms of both organization and content to the special requirements of agricultural occupations, should be of the same quality as those for other occupational areas;
  - (b) programmes should be directed to the development and application of technologies especially suited to rural development through close co-ordination between education and extension services and between these and research services and institutions;
  - (c) programmes should be directed to preparing qualified people for all types of occupations and ranges of technical competence necessary for rural development;
  - (d) programmes should be broadly conceived, including in addition to the special occupational area, an introduction to the commercial aspects of agriculture and the functioning of rural economic institutions.
- Where lack of resources limits the expansion of technical and vocational education, emphasis in the initial stages should be placed on developing programmes for occupations in areas of critical manpower shortage, and in areas of immediate development potential.

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42. Programmes preparing for occupations in small industry, individual farming or the artisan trades, whether urban or rural, and particularly for self-employment, should include commercial studies enabling those engaged in such occupations to take responsibility not only for production, but also for marketing, competent management and the rational organization of the whole enterprise.
43. Programmes leading to occupations in the business and commercial sector should include :
  - (a) a thorough grounding in the methods and skills developed as a result of the application of technology to business and office management and particularly to the acquisition and processing of information;
  - (b) training in the organizational and management skills required for the smooth operation of enterprises in all economic sectors;
  - (c) an introduction to marketing and distribution procedures.
44. Special attention should be given to developing programmes for preparing personnel at all levels for the social services sector (e.g. community and family work, nursing and paramedical occupations, nutrition and food technology, home economics and environmental improvement). Those programmes should :
  - (a) emphasize the relation of the special occupational field to raising standards of living in terms of food, clothing, housing, medical services, the quality of family life or that of the environment as the case may be;
  - (b) be well adapted to the special requirements of local conditions in particular those of climate and geography, materials available and community organization and social patterns.

## **VI. Technical and vocational education as continuing education**

45. The development and expansion of technical and vocational education as continuing education, both within and outside the formal education system, and within the framework of lifelong education, should be a priority objective of all educational strategies and broad provision should be made for allowing everyone, whatever the educational qualifications achieved prior to employment, to continue both their professional and general education.
46. In addition to permitting adults to make up deficiencies in general education or professional qualifications, which has often been the only objective of continuing education, it should now :
  - (a) offer possibilities of personal development and professional advancement;
  - (b) permit the updating and refreshing of knowledge and practical abilities and skills in the occupational field;
  - (c) enable the individual to adapt to technological changes in his occupation or to enter another occupation if these changes render his particular job obsolete;
  - (d) be available throughout working life without restriction of age, sex, prior education and training or position;
  - (e) be broad in scope, including general education elements, and not simply specialized training for one particular job.
47. The appropriate authorities should be encouraged to provide the basic conditions for technical and vocational education as continuing education,

- including consideration of measures providing for paid educational leave or other forms of financial aid.
3. The technical and vocational aspect of continuing education should actively be encouraged through such means as :
    - (a) widespread dissemination of information concerning the programmes available, and how one may take advantage of existing opportunities, including full use of mass media to this end;
    - (b) recognition of successful completion of programmes in terms of remuneration and professional advancement.
  4. Those responsible for organizing programmes of continuing technical and vocational education recognized by the public authorities should consider the following forms :
    - (a) courses given during working hours at the place of work;
    - (b) fuller part-time courses especially designed for continuing education given in secondary and tertiary institutions, already staffed and equipped for technical and vocational education;
    - (c) evening and week-end courses given in the above types of institutions or in community centres;
    - (d) correspondence courses;
    - (e) courses given on educational television;
    - (f) periodic seminars;
    - (g) inter-enterprise programmes;
    - (h) informal discussion groups created and organized on the initiative of students.
  5. The following forms of organization of leave should be considered :
    - (a) day release;
    - (b) block release of varying lengths;
    - (c) release for one or more hours during the working day.
  6. Programmes of technical and vocational education as continuing education should :
    - (a) be designed and taught on the basis of the special requirements of adults, and use teaching methods which take into account the expertise which they have already acquired;
    - (b) contain a built-in mechanism for rapid adjustment to the needs of particular individuals or groups and to technological change.
  7. Special provision should be made for groups with particular requirements :
    - (a) in the case of women, because of the necessity of periods of absence from the labour force imposed by maternity and family responsibilities, in order to enable them to update their knowledge and to improve their professional skills for re-entry into employment;
    - (b) to enable older workers to adapt to new occupations;
    - (c) to provide foreign workers and handicapped workers with specific facilities for pre-training to enable them to adapt to a training programme or to working life;
    - (d) the resources of continuing education should be used to offer unskilled and semi-skilled workers the opportunity to improve their qualifications.
  8. Particular attention should be paid to the development of continuing education programmes suitable in rural areas in terms of content, physical location and time of year offered.

## VII. Guidance

54. Guidance should be viewed as a continuous process and a vital element in education, directed to aiding all to make positive educational and occupational choices. It should ensure that the individual be provided with the necessary prerequisites:
  - (a) to become aware of his interests and abilities and able to set himself precise objectives;
  - (b) to pursue a course of education, whether preparatory or continuing, commensurate with these;
  - (c) to make decisions concerning his occupation, both in the initial and later stages, which lead to a satisfying career;
  - (d) to facilitate transitions between education and employment at whatever level or stage.
55. Guidance services on the national, local and institutional levels should ensure that the paths are kept open between education and initial training and employment, and employment and continuing education and training through:
  - (a) close liaison and co-ordination with training, counselling, employment and placement services;
  - (b) ensuring that all necessary information concerning employment and career opportunities is available and actively disseminated;
  - (c) ensuring that those in employment have access to information concerning opportunities in continuing education and training.
56. While emphasizing the needs of the individual, guidance for young people should be accompanied by information which gives them a realistic view of the opportunities available in a given occupational cluster, including information regarding probable developments in the market and in employment structures, and what may be expected in terms of remuneration, career advancement and possibilities for occupational change.
57. Particular attention should be given to guidance for girls and women:
  - (a) this guidance should cover the same broad range of education, training and employment opportunities as for boys and men;
  - (b) it should systematically encourage girls and women to take advantage of the opportunities available to them.
58. Guidance given in the technical and vocational aspects of general education during the observation or orientation cycle of secondary schooling should:
  - (a) cover a broad range of occupations with supplementary visits to work places and acquaint the student with the eventual necessity of choosing an occupation and the importance of this choice being as rational as possible;
  - (b) aid students in making a positive choice concerning educational streams or options for those wishing to pursue technical and vocational education as preparation for an occupational field or training programmes outside the educational system, and aid those not continuing their formal education or entering training to find employment, while encouraging them to continue their education at a later date.
59. Guidance in technical and vocational education as preparation for an occupational field should:
  - (a) inform the student of the various possibilities open in the particular field

- of interest, the educational background required and the possibilities for later continuing education available;
  - (b) encourage the student to choose an educational programme which will limit his later employment options as little as possible;
  - (c) follow the progress of the student during the educational programmes;
  - (d) supplement the later stages of the programmes by short periods of work experience and study of real work situations.
50. Guidance in technical and vocational education as continuing education should :
- (a) help the employed adult choose the programme of continuing education most suited to his needs;
  - (b) enable him to place himself in relation to the various levels of study and afford him the means of making effective choices.
51. Guidance should be given on the basis of :
- (a) knowledge of the individual which takes account of the social and family factors influencing his attitudes and expectations;
  - (b) information obtained from objective evaluation of the results of testing including aptitude tests;
  - (c) knowledge of his educational achievements and/or achievements in employment;
  - (d) knowledge of employment and career opportunities as well as job satisfaction in the occupational sector in which he is interested or engaged and of demands made;
  - (e) medical records indicating whether the student is physically able to pursue a given occupation.
52. The effectiveness of guidance services should continually be assessed and statistics kept on both the national and institutional levels through :
- (a) the keeping of cumulative records concerning the education of the students as well as follow-up records concerning his employment;
  - (b) a built-in system of evaluation of both quality of staff performance and the methods used in order to effect change or improvement where needed.

#### VIII. The teaching and learning processes : methods and materials

53. In all aspects of technical and vocational education, the methodology of learning should assume equal importance in the teaching and learning process with the subject-matter itself. All aspects of technical and vocational education should be oriented to the needs of the learner and directed to motivating him, and methods and materials developed accordingly.
54. Theory and practice should form an integrated whole : what is learned in the laboratory, workshop or in enterprises should be directly related to the mathematical and scientific foundations of the particular operation or process, and conversely, technical theory, as well as the mathematics and science sustaining it, should be illustrated through their practical applications.
55. Full use should be made of the resources provided by educational technology, with special emphasis on the methods and materials of self-education, in particular audio-visual aids, including multi-media systems, programmed instruction and the use of mass media.
56. The methods and materials used in technical and vocational education

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- should be carefully adapted to the group to be taught. In this respect
- (a) where the language of instruction differs from the native language, teaching materials should make maximum use of numerical and graphical representation, written material being kept to a minimum;
  - (b) where materials developed in one country are adapted for use in another, this adaptation should be carefully made with due regard to local factors.
67. Machines and equipment used in workshops in educational institutions should be geared to the level and training of the users. This equipment should be simple and designed especially for pedagogical purposes, with the use of obsolete or teaching obsolete procedures. Training in the use of complex equipment may be given more appropriately and efficiently if it is geared to the job.

## *Evaluation*

68. Evaluation should be an integral part of the teaching and learning process in technical and vocational education, and its major function should be the development of the particular individual in accordance with his interests and capacities.
69. Although standards of performance should be upheld, evaluation of a student's work should be made on a total basis considering among other things his class participation, his interest and attitude, his relative progress, allowance being made for his aptitudes, and examinations and other factors.
70. Students should participate in the evaluation of their own progress. The evaluation of student work should have a system of feedback built into it so that learning problems and their causes may be identified and taken to correct them.
71. Continuous evaluation of the teaching process should be made by teachers and their supervisors, with the participation of students as well. In order to determine the effectiveness of the methods and materials used and to devise alternatives should the need arise. Continuous evaluation of the teaching-learning process should be undertaken with the participation of representatives from the occupational fields concerned.

## *IX. Staff*

72. To enhance the achievement of the objectives of technical and vocational education, a priority should be given to the recruitment and preparation of adequate numbers of well-qualified and competent teachers, administrators and guidance staff and to the provision of the necessary training and facilities to enable them to function effectively in their profession.
73. The emoluments and conditions of service which are offered should compare favourably with those enjoyed by persons with similar qualifications and experience in other occupational sectors. In particular, promotions, salaries and pension scales for technical and vocational education staff should take into account any relevant experience acquired in employment outside the educational sector.

*Teaching staff*

74. All teachers in technical and vocational education, including those who teach only practice, should be considered an integral part of the teaching profession and as such should be recognized as having the same status as their colleagues in other fields. In this regard :
- (a) the Recommendation concerning the Status of Teachers adopted by the Special Intergovernmental Conference on the Status of Teachers on 5 October 1966 is applicable to them especially as regards the provisions concerning preparation for a profession and continuing education; employment and career; the rights and responsibilities of teachers; conditions for effective teaching and learning; teachers' salaries; social security;
  - (b) arbitrary distinctions between teachers employed by various types of educational institutions, e.g. specialized technical and vocational institutions and general education institutions, should be eliminated.
75. Teachers involved in any aspect of technical and vocational education, whether on a full-time or part-time basis, should possess the personal, ethical, professional and teaching qualities essential for the accomplishment of their work.
76. Teachers of technical and vocational aspects in general education should :
- (a) be familiar with a broad range of specialities;
  - (b) develop the ability to relate these to each other as well as to the larger social, economic and historical and cultural context;
  - (c) where this aspect of technical and vocational education serves primarily an occupation or educational orientation function, be able to give guidance.
77. Considering technical and vocational education as preparation for an occupational field, teachers in this area should have special qualifications depending on the occupation for which they are preparing students :
- (a) if the occupational field requires primarily practical skills the teacher should himself have long employment experience in the exercise of these skills;
  - (b) if students are to be prepared for technician or middle management positions, teachers should have a thorough knowledge, preferably acquired through appropriate practical experience, of the special requirements of this type of position;
  - (c) if the occupational field requires research and theoretical analysis, e.g. an engineering field, the teacher should have a university education and be actively engaged in research himself.
78. Considering technical and vocational education as continuing education, teachers in this area should, in addition to the special preparation for teaching adults, have an adequate knowledge of the working environment of their students and have specialized knowledge and skills in their teaching field.
79. Skilled professionals employed in appropriate sectors outside education should be invited to teach, at suitable points in technical and vocational education, certain programmes in schools, universities or other educational institutions in order to link the world of work more closely to the classroom.
80. Teachers of general subjects in institutions which offer technical and vocational education, in addition to the usual qualification, both professional

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- and in their teaching field, should receive a special initiation covering the objectives and requirements of technical and vocational education.
81. Preparation for technical and vocational teaching should be given as a programme, thereby requiring completion of secondary education equivalent for entrance. All types of programme should be designed with the following objectives in mind:
    - (a) to maintain standards of education and professional preparation with vigour for the teaching profession as a whole and to contribute to the raising of these over-all standards;
    - (b) to develop in the future teacher the ability to teach both theoretical and the practical aspects of his field;
    - (c) to ensure that the teacher will be qualified, with minimum training, to teach other groups than those for which he was initially trained.
  82. Varied and flexible programmes, full time and part time, adapted to the special requirements of a wide variety of recruitment sources as well as to those of the field to be taught and the group or groups to be taught should be available.
  83. In those cases where it is difficult for intending technical and vocational teachers to acquire employment experience, consideration should be given to creating units, attached to teacher-training institutions, for the provision of equipment and teaching materials for the schools in which intending teaching staff would be required to work for varying lengths of time.
  84. The professional preparation of all technical and vocational teachers should include the following elements:
    - (a) educational theory both in general and as especially applying to technical and vocational education;
    - (b) educational psychology and sociology as it especially applies to the group or groups for which the future teacher will be responsible;
    - (c) special teaching methods appropriate to the field of technical and vocational education for which the future teacher is preparing himself; groups to be taught, in methods of evaluation of student work and classroom management;
    - (d) training in the choice and use of the whole range of modern teaching techniques and aids presupposing the use of up-to-date methods and materials in the programme of professional preparation itself;
    - (e) training in how to create and produce appropriate teaching materials of special importance in those cases where technical and vocational teaching materials are in short supply;
    - (f) a period of supervised practice teaching experience before appointment to a teaching post;
    - (g) an introduction to educational and occupational guidance as well as to educational administration;
    - (h) a thorough grounding in safety and emphasis on the ability to teach safe working practice and habitually to set a good working example.
  85. Staff responsible for the preparation of technical and vocational teachers should have obtained the highest qualifications possible in their field.
    - (a) teacher-educators responsible for special technical and vocational education should have qualifications in their field equivalent to those of subject staff in other institutions and programmes of higher education.

- including advanced degrees and employment experience in a related occupational fields;
- (b) teacher-educators responsible for the pedagogical aspect of teacher preparation should themselves be experienced teachers in technical and vocational education and should possess the highest qualifications in a specialized field of education.
86. Staff responsible for the preparation of technical and vocational teachers should be actively engaged in research in their field and provision should be made for this in terms of a reasonable teaching load and access to appropriate facilities.
87. Teaching staff should be encouraged to continue their education, whatever the field in which they specialize, and should have the necessary means to do so. This continuing education which should be made available in a wide range of facilities, should include :
- (a) periodic review and updating of knowledge and skills in the special field;
  - (b) periodic updating of professional skills and knowledge;
  - (c) periodic work in the occupational sector relating to the special field.
88. Account should be taken of a teacher's achievements in continuing education when the responsible authorities consider questions of promotion, seniority and status concerning him.

*Administrative and guidance staff*

89. Administrative responsibilities for technical and vocational education programmes should be entrusted to persons with the following qualifications :
- (a) teaching experience in a field of technical and vocational education;
  - (b) proficiency acquired through study and employment experience in one of the fields taught in the programme;
  - (c) a broad vision of technical and vocational education as a whole and of the interrelation of the various aspects;
  - (d) a knowledge of administrative techniques.
90. The heads of establishments in technical and vocational education should receive adequate administrative assistance so that they can devote most of their time to the highly important educational and scientific aspects of their work. Technical and vocational education establishments should have sufficient staff to provide the following services :
- (a) advice and guidance for candidates and students;
  - (b) the preparation, supervision and co-ordination of all practical work and experiments;
  - (c) the maintenance of instruments, apparatus and tools in workshops and laboratories;
91. Administrators should keep up to date with new administrative techniques and trends through programmes of continuing education. Prospective administrators should receive special training in methods and problems involved in the task. This preparation should include :
- (a) management methods appropriate to educational administration;
  - (b) methods of allocation of available resources given the objectives of the various programmes for which they will be responsible;
  - (c) planning methods.
92. Guidance staff should receive special preparation for their tasks whether

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they are specialists or are teachers serving also as guidance staff. preparation should be equipped to make objective assessments of aptitude, interest and motivation and to have at hand up-to-date information concerning career and education opportunities. During this preparation staff should acquire a direct knowledge of the economy and the world of work through systematically organized visits to enterprises and periods of time spent in enterprises. Guidance staff should be required and provided with facilities — including the opportunity for practical experience — to be acquainted with new methods of guidance and information as to new or changing educational training and employment opportunities.

### X. International co-operation

93. Member States should give priority to international co-operation in the field of technical and vocational education.
  - (a) This co-operation, whether in the framework of bilateral or multilateral agreements, or through international organizations, should be directed towards improving the quality of technical and vocational education in developing and expanding it where necessary.
  - (b) Every effort should be made to co-ordinate within any given country the international assistance activities in the field of technical and vocational education.
94. Member States should take special measures to provide foreign workers (in particular migrants and refugees) and their children living within their territory with technical and vocational education. Such measures should take into account the special needs of such persons in the host country as well as in view of their possible return to their country.
95. Provision should be made at national, regional and international levels to promote the regular exchange of information, documentation, and materials of international interest obtained from research and development efforts at all levels concerning technical and vocational education, in particular:
  - (a) publications concerning, among others, comparative education, pedagogical and pedagogical problems affecting general and technical and vocational education, and current trends;
  - (b) information and documentation concerning curriculum development, teaching methods and materials, study opportunities abroad, employment opportunities including manpower requirements, working conditions and social benefits;
  - (c) teaching materials and social benefits;
  - (d) mass media programmes of an informational or pedagogical character.
96. Regional co-operation among countries having a common cultural heritage and facing common problems in the development or extension of technical and vocational education should be highly encouraged through:
  - (a) periodic meetings on the ministerial level and the establishment of a permanent standing committee or organization to review policies formulated and actions taken;
  - (b) the creation of joint facilities for higher level research, the development of prototype materials and equipment, and the preparation of the training of teachers where the costs of such facilities are to be sustained by any one country in a given region.

97. The development of both written and audio-visual teaching and learning materials which are suitable for international or regional use should be considered a priority area in international co-operation. These materials should contribute to the progressive establishment of common standards for professional qualifications acquired through technical and vocational education.
98. Member States should encourage the creation of a climate of opinion favourable to international co-operation in the field of technical and vocational education through :
  - (a) teacher and student fellowships and exchanges;
  - (b) establishment of sustained contacts between similar institutions in different countries;
  - (c) provision of employment experience abroad, particularly when opportunities at home are limited.
99. To facilitate international co-operation, Member States should apply within technical and vocational education internationally recommended standards and norms relating in particular to :
  - (a) system of measure;
  - (b) scientific and technical symbols;
  - (c) occupational qualifications;
  - (d) information processing;
  - (e) equivalencies of qualifications acquired through technical and vocational education implying standardization of curricula and testing, including aptitude tests, for some technical fields;
  - (f) safety and security through testing of materials and products.
100. Internationally recommended standards and norms concerning technical and vocational education should be continuously evaluated through sustained research concerning the effectiveness of their application in the various countries especially in order to facilitate the establishment of equivalence of qualifications and free movement of individuals between the different national systems of education.

APPENDIX D: "The Quality of Population in Developing  
Countries, with Particular Reference to  
Education and Training" by Mark Blaug

## SUMMING UP

Human capital theory is sufficiently robust to gauge particular improvements in population quality. Many low-income countries have during the past two or three decades made large investments in various stocks of capital that are embodied in people. The growth in the stock of health capital is more impressive. The improvement in health that accounts for the 40 percent and more increase in life span is an unprecedented achievement. People of all ages throughout the population have participated in this achievement. Child quality has risen. When account is taken of large increases in schooling per pupil along with the gains in health, the quality of school-age children and young adults is clearly much better than it was for the same age class some decades ago. The effects of the additional schooling and of the improvements in health on labor productivity have been favorable. The supply of entrepreneurship throughout the economy has increased considerably; people are taking more effective advantage of the new economic opportunities associated with modernization. Annual savings have also been enhanced substantially by the investment in human capital.

As noted elsewhere, in a society where life is short, labor earns a pittance; work is hard and life is harsh.<sup>24</sup> Vitality is low, illiteracy abounds, and people languish. A turn to a better future comes when the span of life increases. Incentives become worthwhile; to invest in more schooling and the time spent at work becomes more productive. Investment in human capital and the resulting improvements in population quality matter. "Standing room only" becomes a myth.

24. Ram and Schultz, "Life Span, Health, Savings, and Productivity."

## The Quality of Population in Developing Countries, with Particular Reference to Education and Training

MARK BLAUG

### INTRODUCTION

THE "QUALITY" OF POPULATION in a country is usually taken to mean its state of health, its nutritional standards, and the level of its skills and competencies. The problem of health and nutrition in developing countries is a vast subject in its own right. The subjects of concern in this essay are those population qualities that can be improved by formal and non-formal education and training programs. Much has been achieved in this regard in Asia, Africa and Latin America over the last two or three decades, and yet educational and training issues in the three continents of the Third World continue to be matters of profound controversy. The aim here is a twofold one: to sum up the accomplishments to date and to convey the flavor of current debates. There is in fact a widespread sense throughout the Third World that something has gone wrong of late with development policies in general, and with educational and training policies in particular. Indeed, to any economist who, like the writer, has long been concerned with questions of educational planning in developing countries, the intellectual landscape has recently undergone an amazing sea change.

In the 1950s and 1960s, economists were thick on the ground in every ministry of education in every capital city of the less developed countries (LDCs). Those were the days when all indications pointed toward the rapid expansion of educational systems at all levels and when economists were welcomed for producing new arguments to support an educational inflation that was desired anyway on political grounds. What did it matter that manpower forecasting was crude and that cost-benefit analysis was based on rather implausible assumptions, when in fact they led to answers that called for still more education? No one likes to look a gift horse in the mouth, and politicians are always thankful for all the help they

can get. Economists who still remember those days have reason to look back at them with nostalgia.

To be an economist interested in education in the 1970s is not quite so easy. The streets of Calcutta, Karachi, Cairo, Accra, Bogota and Buenos Aires are filled with unemployed university graduates, even as the civil services in these countries are overstocked with graduates. In Africa, the so-called school leaver problem, which only ten years ago referred exclusively to unemployed leavers from *primary* schools, now designates the unemployed products of secondary as well as primary schools. In the famous Addis Ababa Conference of 1961, African ministers of education looked forward confidently to universal primary education by 1980. Nineteen hundred and eighty is only one year away and yet in more than half of the 46 countries in tropical Africa, it is now perfectly obvious that universal primary education will not be achieved even by the year 2000. Everywhere there is deep dissatisfaction with the quality of education—the curriculum, the examination system, the standards of teacher training, and so on. There must be something wrong with an educational system, it is argued, that encourages students to gear all their efforts to the passing of examinations, leading to the next cycle of education and still more examinations, for the sole purpose of gaining entry into wage employment in the modern sector of the economy when so many of them clearly never will achieve this goal. Ivan Illich's books appear to be addressed to audiences in advanced countries, and yet his thoroughly subversive idea of deschooling has not fallen entirely on deaf ears even in developing countries. The new American theories of screening, namely, that educational certificates serve no other function than to discriminate between individuals in terms of achievement drive, adds strength to the impact of Illich's writings. The "diploma disease" may be a worldwide phenomenon,<sup>1</sup> but, surely, it is Third World countries that are really obsessed by "credentialism."

The new circumstances of the 1970s have produced new priorities in educational planning. No longer are ministries of education solely preoccupied with the building of more schools to accommodate ever larger enrollments, and with the expansion of teacher training facilities to equip the new schools with more teachers. Nowadays, educational plans in the Third World consist largely of ambitious schemes to (1) introduce work experience into the primary school curriculum, (2) to integrate adults with children in a more flexible system of first-stage education, (3) to vocationalize the curriculum of secondary schools, (4) to introduce a mandatory period of labor market experience between secondary and higher

1. R. Dore, *The Diploma Disease. Education, Qualifications and Development* (London: Allen and Unwin, 1976).

education, and (5) to recruit the dropouts of the educational system into a national youth employment service. Everywhere there is an interest in reforming the examination system so as to minimize the testing of academic achievement and to maximize the testing of natural aptitudes that cannot be acquired by rote learning. Some countries have begun to introduce geographical quotas as a basis for educational selection, and there is even talk of imitating the Chinese by using social quotas in terms of family background. If the slogans of the 1960s were "universal primary education," "manpower planning," and "investment in human capital," the slogans of the 1970s are "basic education," "earning while learning," "life-long education," and "aptitude testing instead of examinations."

In such an atmosphere, the arguments of economists appear to be both unnecessary and irrelevant. Nevertheless, economists still have valuable lessons to impart to educational planners in developing countries. No doubt many of these lessons will be harder to teach than the old ones, more easily resisted than the lessons of yesterday, and more politically dangerous to implement than the recommendations of ten years ago. Still, economists have insights they can bring to bear on the outstanding issues in the field of education and training that are easily missed by noneconomists. In that sense, economists still have a contribution to make to educational planning in poor countries.

## EDUCATION AND ECONOMIC DEVELOPMENT

It is useful to think of educational planning as consisting of a definite hierarchy of decisions:

1. How much of the total resources of an economy should be devoted to education and training?
2. How much should be spent by government, relying on private finance to fill out the rest?
3. How should public expenditures on education and training be divided between formal education provided by educational institutions and nonformal training provided by industry and various government agencies (subsidies for on-the-job training, off-the-job training, adult education, literacy campaigns, agricultural extension, and so on)?
4. How should public expenditures on formal education be divided among the different levels of the educational system?
5. How should these in turn be divided among the institutions comprising a level of education?

Consider now the first two of the items in the list. Clearly, if these two decisions are made irrationally, all subsequent decisions in the list must be suboptimal. Now what can the economist say about these two grand overall planning decisions? Very little, if the truth be told. No doubt there is a positive relationship between the volume of education and training provided, on the one hand, and the level and rate of growth of national income, on the other. But such general knowledge is of little use to a particular government interested in accelerating the pace of economic development. After two decades of intensive research on the association between education and national income around the world, little more can be said than that a 10 percent rate of enrollment in primary schools and a 40 percent literacy rate is a necessary but, alas, not a sufficient condition for rapid economic advance.<sup>2</sup> It is, in fact, easier to show that nations are better educated because they are rich than that they are rich because they are better educated. Even at the level of a given occupational category within a given industry, no universal relationship can be laid down between the education of workers and the output of the productive processes in which they participate. Countries progress along a variety of manpower growth paths, and the range of alternatives is almost as wide as the range of their living standards. Differences in social attitudes and in political systems, not to mention the costs and finance of educational systems, widen the range even further. In short, what is learned from international comparisons is that nothing is learned from international comparisons.

Even if the first item on the list of decisions is taken for granted, the second item would itself raise insuperable problems. If the general principle is accepted that there can be no *economic* justification for devoting more resources to any particular use—and thus less to all others—unless this results in greater measurable economic benefits per unit of costs, cost-benefit analysis of each and every area of government activity clearly cannot be carried out so as to equalize cost-benefit ratios in all lines of public expenditure. The notion that educational planning cannot be done until the problems of the economics of, for example, health, housing and social insurance are solved is a counsel of despair. Besides, experts in the other social services are likewise waiting for educational planners to solve their problems so they can in turn determine the optimum level of expenditure in such areas as health and housing.

Like it or not, therefore, scholars seem doomed to analyzing allocative efficiency in the field of education and training at a suboptimal level. The constraint within which operations are possible—total public expenditures

2. M. Blaug, *An Introduction to the Economics of Education* (London: Penguin, 1970), chap. 3.

on education—is determined by a political process that is only vaguely connected with any objectives that might be described as economic. Thus, effective educational planning begins not with item 1 or 2, but with item 3 in the preceding list.

### THE OPTIMUM SHAPE OF THE EDUCATIONAL PYRAMID

A broad historical look at some of the most prominent advanced countries that fifty or sixty years ago were underdeveloped—say, Japan and the Soviet Union—will reveal the following pattern. The typical picture of the expansion of schooling—in the case of Japan since about 1890, and in the case of the Soviet Union since the October 1917 Revolution—illustrates a policy of first attaining universal primary education while holding back secondary and higher education. Then, having almost reached universal primary education—in Japan around 1912, and in Russia around 1930—a more generous attitude was taken toward secondary education, while higher education was still kept tightly under control. Only when secondary education had become almost universal in these countries—in the case of Japan about 1930, and in the case of the Soviet Union about 1950—was higher education allowed to expand.<sup>3</sup> This classic pattern of allowing the educational pyramid to grow at the base and only thereafter allowing it to grow in the middle and at the apex has been completely reversed in the recent experiences of the Third World. Ever since 1950, in practically all of the hundred or so developing countries in the world, secondary education and higher education have grown faster than primary education both in terms of enrollments and in terms of educational expenditures. Or, to express the same thought in other words: secondary and particularly higher educated manpower has been overproduced in most of Africa, Asia and Latin America beyond all possible hopes of absorption into gainful employment, whatever the feasible rates of future economic growth in these countries. Therefore, the first priority in educational planning in the Third World is to reduce somehow the rates of growth of secondary and higher education, shifting resources from the upper to the lower levels of the educational system.

3. For Japan, see R. P. Dore, "Education in Japan's Growth," *Pacific Affairs* 14 (Spring 1964); and W. E. Lockwood, "Employment, Technology and Education in Asia," *Malayan Economic Review* 16 (2) (October 1971):21. For the USSR, see N. De Witt, *Education and Professional Employment in the USSR* (Washington, D.C.: USGPO, 1961), pp. 37, 130-39, 439-41, 449; and K. Nozhko *et al.*, *Education Planning in the USSR* (Paris: UNESCO-IIEP, 1968), pp. 21, 26.

What is the evidence for such a bold assertion? It is evidence of three kinds. Firstly, there is the evidence of growing open unemployment of secondary and higher educated individuals throughout Asia, Africa, and Latin America, which is further considered below. Secondly, there is the fact that forecasts of manpower requirements in Third World countries increasingly predict middle-level and higher-level manpower surpluses rather than shortages in the decade to come.<sup>4</sup> Thirdly, there is evidence that the social rate of return on investment in education is almost always lower in secondary and higher education than in primary education.<sup>5</sup>

One may quarrel about the reliability of unemployment statistics in developing countries. One may dismiss the technique of manpower forecasting as little more than guesswork dressed up in numbers. One may likewise throw doubt on rate-of-return analysis for relying too much on monetary earnings as a measure of the economic contribution of education. And one may also point to certain countries, such as Burma, Mali, Botswana, Bolivia, and Ecuador, that continue to face serious shortages of middle-level and particularly higher-level manpower. But by and large in the three continents with most of the less developed nations, it is true to say that all indications point toward the past overexpansion of the upper levels of the educational system and a concomitant underinvestment in the lower levels. Even if only the planning targets of these countries themselves are considered, the point would still remain valid. For example, primary enrollments in Africa were in 1977 well below the Addis Ababa targets set in 1962, whereas enrollments in secondary and tertiary education were well above the original planned targets. Most of the overexpansion in higher education in Africa has so far been disguised by overemployment of university graduates in the public sector,<sup>6</sup> in consequence of which, overexpansion of education in Africa has only shown up dramatically to date in the form of open unemployment among secondary school leavers. But now that many African governments are beginning to be unwilling to absorb university graduates in the civil service, owing to increasing fiscal pressures,

4. See D. Turnham, *The Employment Problems in Less Developed Countries. A Review of the Evidence* (Paris: OECD, Development Centre Studies, Employment Series 1, 1971), pp. 119-20; ILO, *Growth, Employment and Equity. A Development Plan for Sudan* (Geneva: ILO, 1976), pp. 403-406 (referred to hereafter as the ILO Sudan Report).

5. See G. Psacharopoulos, *Returns to Education. An International Comparison* (Amsterdam: Elsevier, 1973), ch. 4; H. H. Thias and M. Carnoy, *Cost-Benefit Analysis in Education. A Case Study of Kenya* (Baltimore: John Hopkins University Press, 1972), pp. 93-94, 128-32; and ILO Sudan Development Plan, pp. 406-408.

6. Egypt's policy of guaranteed employment for university graduates has for long been the most striking example of this tendency in Africa. But the Sudan is another example: see ILO Sudan Development Plan, pp. 115-16.

we can expect to see Africa following Asia in massive open unemployment of university graduates.

### NATURE AND MAGNITUDE OF EDUCATED UNEMPLOYMENT

Educated unemployment, and particularly graduate unemployment, has slowly emerged as the major educational problem of LDCs in the 1970s: To convey the magnitude of the problem, the facts for a few Asian and African countries will be briefly surveyed. The term "educated unemployment" refers in each case to open unemployment among those who at least completed a given level of education, but the particular level will vary from country to country: for example, in India it refers to "matriculates" and college graduates; in Bangladesh it refers to all those with a secondary school certificate or above; in Sri Lanka it refers to those with O-levels and above; and throughout Africa it generally refers to those who have at least completed primary education.

The best data on educated unemployment in the Asian continent are found in India. The Expert Committee on Unemployment Estimates, better known as the Dantwala Committee, devoted several pages to a review of the Indian evidence on educated unemployment; 1969 saw the publication of an entire book on the subject, and more recent figures are given in a special enumeration of the 1971 Census of Population.<sup>7</sup> Recent data on educated unemployment in Sri Lanka are found in the country mission report of the International Labour Organization (ILO) World Employment Programme,<sup>8</sup> and there is some partial evidence for Bangladesh in recent years.<sup>9</sup>

7. *Report of the Committee of Experts on Unemployment Estimates* (Delhi: Planning Commission, Government of India, 1970), pp. 149-51 (referred to hereafter as the Dantwala Committee Report); M. Blaug, R. Layard, and M. Woodhall, *The Causes of Graduate Unemployment in India* (London: Allen Lane, Penguin, 1969); Ministry of Labour and Rehabilitation, Department of Labour and Employment, *Report of the Committee on Unemployment* (Delhi: Government of India, 1973), app. 15, 16 (referred to hereafter as the Bhagwati Committee Report); and K. V. E. Prasad, "Education and Unemployment of Professional Manpower in India," Zakir Husain Centre for Educational Studies, Jawaharlal Nehru University, New Delhi, 1977.

8. ILO, *Matching Employment Opportunities and Expectations. A Programme of Action for Ceylon* (Geneva: ILO, 1971) (referred to hereafter as the ILO Sri Lanka Report). See also P. J. Richards, *Employment and Unemployment in Ceylon* (Paris: OECD, Employment Series, 3, 1971).

9. See A. Josefowicz, *Unemployment Among the Educated Youth* (Karachi: Planning Commission, Government of Pakistan, 1970). See also M. Obaidullah, *A Study of Employment Survey of Graduates* (Dacca: Institute of Statistical Re-

In all developing countries, it appears to be true that unemployment is higher among educated groups than among illiterates and higher at the middle levels of the educational system than at the lower or upper ends. These characteristics also obtain in India.<sup>10</sup> Likewise, the incidence of educated unemployment the world over is heaviest among the younger age groups, and again this characteristic is found in India.<sup>11</sup> A much more controversial but nevertheless general feature of educated unemployment in developing countries is its concentration among first job seekers. The rate of open unemployment among the educated is high because so many of them take from 6 to 12 to 24 months to find their first job; the rate of unemployment among those who have worked before is in fact trivial. Blaug, Layard and Woodhall estimated the "waiting period" after graduation of an average matriculate in 1967 at 18 months, and that of an average university graduate at 6 months, a finding which has been endorsed by the Dantwala Committee.<sup>12</sup> This may be contrasted with an average waiting period of 3-4 weeks for university graduates in countries like the U.S. and U.K.

Since then, a special enumeration of the 1971 Census shows that the average "waiting period" of first degree holders in 1971 had crept up to 12.7 months for males and 14.2 months for females; among male master's degree holders, it was even higher than that, namely, 13.1 months, and even among Ph.D.s it was as high as 12 months.<sup>13</sup> Since some graduates, particularly those with first class degrees, get a job immediately after leaving college, an average waiting period of 12 months implies that 10-20 percent of all graduates actually search for work over a period as long as 4-5 years. Lest it be thought that such long waiting periods are mostly due to the large proportion of graduates with "general" degrees in liberal studies, it should be noted that the average waiting period for graduate civil engineers in 1971 was 11.4 months; likewise, for master's and doctoral degree holders in physics it was as high as 13 and 11.6 months

search and Training, University of Dacca, 1971); and J. M. Ritzén, J. B. Balderston, *Methodology for Planning Technical Education. With a Case Study of Polytechnics in Bangladesh* (New York: Praeger, 1975). For data on other Asian countries, see UN-ECAFE, *Economic Survey of Asia and the Far East, 1973, Part One, Education and Employment* (Colombo, Sri Lanka: ECAFE, 1974), pp. 47-50.

10. See Turnham, *Employment Problems in Less Developed Countries*, pp. 51-52.

11. *Ibid.*, pp. 47-51.

12. Blaug, Layard, and Woodhall, *Causes of Graduate Unemployment in India*, pp. 74-81, 89-90; and Dantwala Committee Report, p. 150.

13. Bhagwati Committee Report, App. 15.

respectively.<sup>14</sup> The total number of educated unemployed in India in 1978 may be crudely estimated at about 3 million.

The rate of unemployment among university and polytechnic graduates in Bangladesh has in recent years been as high as 25 percent and the average "waiting period" for polytechnic graduates has been calculated to be 5 months.<sup>15</sup> Still higher rates of educated unemployment have been reported for Sri Lanka, at least for primary and secondary school leavers.<sup>16</sup>

Turning to Africa, it is likewise found that rates of unemployment among primary school leavers are sometimes lower than among persons of the same age who have never been to school.<sup>17</sup> This should not be surprising because education in Africa has for a long time been a major criterion for selecting those that are eligible for formal sector employment in both government and private firms. At the same time, it is also true that African school leavers have been finding it increasingly difficult to obtain wage-earning employment, or at least to obtain it on the same favorable terms as five or ten years earlier. A number of tracer studies in Africa have documented the employment experience of school leavers over the first few years after leaving school.

Table 11.1 summarizes the results for school leavers in Ghana, Kenya, Swaziland and Zambia. Most of the rates of unemployment for recent years are high, although not necessarily higher than the rates of other persons in the same age bracket; rates of job-seeking in Africa among all young people aged 15 to 24, especially if they are unmarried and without dependents, are invariably extremely high. Note also that for each cohort, the rates of unemployment decline over time, suggesting that after a period of search, most of the school leavers do find work.<sup>18</sup> In these respects, the school leaver problem, like the general employment problem, is somewhat different from what is often imagined. But there is no reason to be complacent: given the expected rates of growth of school leavers in Africa, as against the expected rates of growth of formal sector employment, there is

14. Prasad, "Education and Employment of Professional Manpower in India."

15. See Ritzén and Balderston, *Technical Education*, pp. 70-72.

16. ILO Sri Lanka Report, Table 8 and Diagrams 1, 2, pp. 28-29.

17. Kenya is one such example: see ILO, *Employment, Incomes and Equality. A Strategy for Increasing Productive Employment in Kenya* (Geneva: ILO), Table 19, p. 59 (referred to hereafter as the ILO Kenya Report).

18. The decline in educated unemployment as time passes after graduation also comes out clearly in Manpower Services, Ministry of Economic Planning, *Survey of the Pattern of Employment and Employment Prospects of Polytechnic Graduates in Ghana* (Accra: Ministry of Economic Planning, 1975), Table 13; and ILO Sudan Report, Table 97, p. 374.

every reason to think that the so-called school leaver problem in Africa will get worse over the next ten years.<sup>19</sup>

### THE CAUSES OF EDUCATED UNEMPLOYMENT

When a developing country suffers from general, open unemployment and underemployment—as all LDCs do—it is not surprising to find that some of the unemployed are by no means without some schooling and even that they include a certain proportion of secondary school leavers and university graduates. However, the magnitude of educated unemployment in Asia and sub-Saharan Africa, and perhaps even more the persistence of the phenomenon in certain Asian countries over decades, if not generations, is in fact somewhat surprising. For obvious reasons, unemployment of educated people is a more serious problem than unemployment in general:

TABLE 11.1  
Percentage of Junior Secondary School Leavers Unemployed  
One or Two Years Later in Selected African Countries, 1963–73

Countries	Year of leaving	One year after leaving	Two years after leaving
Kenya	1965	2	—
	1966	1	—
	1967	1	1*
	1968	15	9
	1969	16	4
Zambia	1971	38† 20	10
	1973	22‡ 7§	—
Swaziland	1963	11	—
Ghana	1963	—	15
	1964	—	40
	1965	44†	—

SOURCE: UN-ECA, *Survey of Economic and Social Conditions in Africa 1976–1977 (Part 1)*. Addis Ababa: UN, 1978, p. 66.

\* 3 years after leaving.

† 6 months after leaving.

‡ 8 months after leaving (includes 4 percent unknown).

§ 14 months after leaving.

|| Including persons working in South Africa.

18 months after leaving.

19. See R. P. Dore, J. Humphrey, and P. West, *The Basic Arithmetic of Employment* (Geneva: ILO, 1976).

in most cases, social as well as private resources have been invested in educated individuals in the hope, among other things, that education would render them more employable; moreover, educated individuals are likely to regard gainful employment as a human right, and their discontent upon finding themselves unemployed can become a potent threat to national security. For all these reasons, governments are likely to attach high priority to the elimination of educated unemployment or, at any rate, are likely to entertain the belief that it can be eliminated long before full employment of all labor is achieved.

It is perfectly conceivable that general unemployment and educated unemployment stem from different causes and that, in this sense, the latter can be eliminated without necessarily curing the former. Educated unemployment, some will argue, is due to the effects of education on the career aspirations of students, creating what is in effect a gap between expectations and opportunities; this kind of structural imbalance can be removed by appropriate educational reform, even though an overall imbalance between the demand and supply of labor might continue indefinitely.<sup>20</sup> But despite the plausibility of this argument, it is far from obvious that the causes of structural and overall imbalance can be distinguished in this way.

Overall imbalance of labor means that there is an excess supply of labor over the volume of employment that is generated by the structure of production, the existing technology, the current rate of wages, and the range of product prices ruling in the market. Structural imbalance, as exemplified by educated unemployment, may mean that the labor force is too highly educated for that volume of employment; in other words, there are just too many educated people for the prevailing job opportunities, whatever their aspirations and expectations. It cannot be denied that if educated people were willing to accept any job that was offered to them, including manual work at substandard wages, educated unemployment would virtually disappear overnight. But this can also be said of general unemployment. It is always unrealistic to discuss the problem of unemployment without taking some account of the given job aspirations of people. It remains an open question, therefore, as to whether the educational system in the Third World is *artificially* raising the expectations of graduates, so that they end up demanding more well-paid, white collar jobs than are in fact available.

To put it more sharply, is it really true that the type of education they have received robs them of the capacity to adjust their expectations to the prevailing realities of the labor market? Unless the question is put this

20. L. Emmerij, "Research Priorities of the World Employment Programme," *International Labour Review* (May 1972), p. 415.

sharply, it is pointless to debate educational remedies for the situation. It is hardly practical to argue, for example, that the graduates of urban schools and colleges are unemployed because they refuse to "get their hands dirty" by migrating to farms in the countryside, and that the educational system should be thoroughly reformed so as to instill a "love for farming" among town-bred youngsters. If feasible educational reforms that might make an impact on the employment problem are to be discussed, it must be taken for granted that educated youngsters will always aspire to the better-paid jobs in society, whatever the content of education and whatever the level of economic development.

Enough has now been said to suggest that there are difficulties in accounting for educated unemployment in the absence of general unemployment and underemployment, and there is always the possibility that the former is simply a by-product of the latter. Be that as it may, the attempts to date to single out educated unemployment as a special problem in developing countries come in essentially two versions, with innumerable variations thereon.<sup>21</sup> The first stresses the unprecedented rates at which the total population, the economically active population, and the urban educated population have been growing in Africa since about 1950. Rates of growth of 3.5 percent for total population, 3 percent for the labor force, 6-7 percent for the urban labor force and 8-10 percent for the stock of educated people with primary education and above are now common in many developing countries, and these rates are unprecedented in a double sense: they exceed what the developing countries experienced before 1950, and they exceed what the advanced countries experienced at early stages of their industrialization. Given these rates of growth, it would take an equally unprecedented pace of economic expansion, as well as an unusually flexible labor market, to prevent the emergence of heavy unemployment. In addition, most of Africa has recently been pursuing an economic policy of promoting import-competing, capital-intensive manufacturing industry, and this type of economic growth has generated surprisingly little extra employment, thus exacerbating the employment problem. These pressures do not necessarily show up in mass unemployment because in largely agrarian countries, the rural sector will tend to soak up redundant labor in the form of underemployment on family farms. Open unemployment will only surface in cities and, of course, the educated tend to concentrate in urban areas. To arrive at a more or less self-contained theory of educated unemployment needs only the additional citation of (1) the presence of an extremely wide salary differential owing to past scarcities of highly qualified

21. For a different typology of explanation, see S. G. Fields, "The Private Demand for Education in Relation to Labour Market Conditions in Less-Developed Countries," *Economic Journal* (December 1974).

manpower and the historical influence of colonial administration in Asia and Africa, if not Latin America; (2) the tendency of a rapidly growing public sector in LDCs to define entry pay scales strictly in terms of educational attainments; and (3) the traditional prejudices of urban middle-class families against manual blue collar employment. This theory is set forth, with rich variations on the theme, in Volume II of Gunnar Myrdal's influential book, *Asian Drama* (1968).

The second type of explanation of educated unemployment in African-type economies takes for granted the sort of facts cited above, but stresses the economic rationality in the prevailing circumstances of both the private demand for education and the length of job search after leaving school: despite long periods of unemployment, schooling is profitable to students and their families. It argues that labor markets in the countries of the region do adjust to the presence of unemployment, but, for various cultural and political reasons, the adjustment is too slow to eliminate unemployment in any finite period of time. Low job mobility and the tradition of the extended family create long lags in the demand for and supply of educated people; low job mobility, or the certain knowledge that the first job will be the last job, lengthens the search period for the first job and the extended family guarantees that the long search period will somehow be financed. In addition, heavy government subsidies to education, particularly at the tertiary levels of the educational system, tend continually to underwrite the explosion in the demand for education.<sup>22</sup>

What differences exist in these two types of explanations lie less in the facts which they both invoke as in the policy perspectives which they offer. The first explanation points directly to the content of education as forming, or at any rate encouraging, traditional antipathies to manual work and, consequently, emphasizes the need for curriculum reform. This approach also directs attention to the imperfections of labor markets and usually culminates in the recommendation of a wages and incomes policy, designed to reduce sharply the existing inequalities between wages and salaries. The second explanation, on the other hand, places major emphasis on the financing of education and, in general, on questions of quantity rather than quality of education. According to this view, educated unemployment in Asia, Africa and Latin America is essentially a problem of excess supply rather than deficient demand, and its recommendations for policy are chiefly directed at the problem of shifting resources from the upper to the lower levels of the educational system, while at the same time attempting to improve the flexibility of the labor market.

22. See Blaug, Layard, and Woodhall. *Causes of Graduate Unemployment in India*.

These distinctions in types of explanations and in associated policy proposals are not clear-cut, and some writers, such as Phillip Coombs in his popular book, *The World Educational Crisis: A Systems Analysis* (1968), neatly combine elements of both points of view. Nevertheless, it is useful to keep in mind the different standpoints which different authors bring to bear on the problem of educated unemployment in developing countries, which largely account for the wide array of practical recommendations that are encountered in the literature.<sup>23</sup>

Elsewhere, the writer has drawn a sharp contrast between the "quantitators" and the "qualitators" in the educational planning literature; that is, between those who trace all educational ills to a quantitative discrepancy between the supply of educated people and the demand for them, and those who instead trace them to qualitative failures of the educational system.<sup>24</sup> And although this contrast is too extreme, it is nevertheless true that different writers on the subject tend to emphasize either quantitative or qualitative dimensions of the employment problem of educated people in LDCs and, in many cases, it is illuminating to keep them distinct. Thus, we take up first with those who hold out purely quantitative remedies to the problem of educated unemployment and underemployment in LDCs.

### QUANTITATIVE REMEDIES

Many countries are now agreed that current rates of growth of secondary and higher education cannot be allowed to continue, although very few have gone so far as the Philippines in asserting that these rates of growth

23. There is a rich literature on the employment problem of educated youths in Africa and Asia. For Africa, the Kericho and Niamey conferences outlined the essentials of the problem ten years ago: *Education, Employment and Rural Development*, edited by J. R. Sheffield (Nairobi: East African Publishing House, 1967), and *Youth Employment and National Development in Africa* (Addis Ababa: UN-ECA, 1968). Two UNESCO-IIEP African Research Monographs deal directly with the same question: G. Hunter, *Manpower, Employment and Education in the Rural Economy of Tanzania* (Paris: UNESCO-IIEP, 1966) and A. Callaway, *Educational Planning and Unemployed Youth* (Paris: UNESCO-IIEP, 1971). For additional African references, see *The School Leaver in Developing Countries*, edited by P. Williams (London: NFER, 1976), App. 3. For Asia, see the wide-ranging UN-ECAFE, *Economic Survey of Asia*.

24. M. Blaug, *Education and the Employment Problem in Developing Countries* (Geneva: ILO, 1973), ch. 6. For another statement of these different approaches, see R. Jolly, et al., *Third World Employment. Problems and Strategy* (London: Penguin Education, 1973), pp. 171-73.

will not be allowed to continue.<sup>25</sup> Some countries, such as Tanzania, Zambia, and Egypt, even agree that primary education should be expanded at the expense of the growth of secondary and higher education; that is, they agree that resources are to be reallocated from the top to the bottom of the educational system. But all this is easier said than done. Public opinion throughout the Third World is firmly opposed to enrollment ceilings and, in these circumstances, it would be suicidal for a politician to demand quantitative restrictions on secondary and higher education. Moreover, most Third World governments are deeply committed to the principle of higher education as a right and not a privilege for all those who are properly qualified, and this commitment militates against the attempt to clamp down on the growth of higher education. Moreover, there is an equally firm commitment to free higher education, including the commitment to finance cost of residence and out-of-pocket expenses of attendance. These commitments in fact deny to a government the lever of increased tuition fees as a device for discouraging demand for higher education.

Although governments may seek to curtail the growth of enrollments simply by setting ceilings on admissions or expenditure limits on new buildings, experience has shown how easily such government plans may be abandoned in the face of strong public demand for more places. To achieve success, therefore, it is necessary to supplement direct with indirect measures. One such indirect measure is higher tuition fees combined with a limited number of scholarships for poor students from the backward regions and a student loans scheme for all students, to be financed by a special graduate tax on future incomes. Some African countries, such as Tanzania, and some Asian countries, such as Sri Lanka, have begun to draw the attention of the public to the fact that university students are in fact a privileged élite. Indeed, a survey of the social composition of students in higher education in Third World countries would reveal that the average university student is, to put it mildly, much better off than the average taxpayer, not to mention the average peasant or urban worker.<sup>26</sup> So long as this is true, free higher education is a form of regressive taxation

25. Presidential Commission to Survey Philippine Education, *Education for National Development, New Patterns, New Directions* (Makati, Rizal: Presidential Commission, 1970), p. 27.

26. It must be admitted, however, that the evidence on this point is scarce and far from unambiguous: for India, see Blaug, Layard and Woodhall, *Causes of Graduate Unemployment in India*, pp. 130-33; for the Philippines, see ILO, *Sharing in Development. A Programme of Employment, Equity and Growth for the Philippines* (Geneva: ILO, 1974), pp. 327-30 (referred to hereafter as the ILO Philippines Report).

which makes a mockery of the policy of egalitarianism to which most Third World governments are dedicated.<sup>27</sup>

It is sometimes argued that a student loans scheme or graduate tax would be impractical in developing countries where income tax evasion is widespread and where individuals frequently pool their incomes with distant relatives. But the ILO Philippines Report suggests that a student loans program could be rigorously confined to able, poor students by asking them to make a sworn declaration that parental income did not exceed a stated level; in case of dispute, parental income could be assessed on the basis of the father's occupation and an arbitrary scale of income per age per occupation applied to the father's occupation. Students themselves would, in addition, have to satisfy a minimum standard of educational achievement, but this would be set deliberately below the average standard achieved by their peers on the grounds that an insistence on equal merit as the criterion for eligibility would immediately discriminate against students from poor families.<sup>28</sup> In short, student loans schemes could be made to work in LDCs and, of course, a number of African and Asian governments operate such schemes on a limited basis.<sup>29</sup>

The idea of stemming the growth of higher education by either direct or indirect means sometimes meets with the objection that the effect of cutting down on higher education is simply to multiply the number of unemployed secondary school leavers; and unemployment among secondary school leavers is no easier to deal with than unemployment among university graduates. But this argument ignores the object of the exercise, which is to release current resources invested in higher education, so that these can be applied either to the lower levels of the educational system, or to income-earning opportunities generated elsewhere in the economy. Nothing that we do to educated unemployment solves the problem of general unemployment. It merely ensures that public funds are not invested unproductively. President Nyerere of Tanzania expressed the argument succinctly:

It is essential that we face the facts of our present economic situation. Every penny spent on education is money taken away from some other needed activity—whether it is an investment in the future, better medical services, or just more food, clothing and comfort for our citizens

27. See G. Psacharopoulos, "The Perverse Effects of Public Subsidization of Education or How Equitable is Free Education?," *Comparative Education Review* (February 1977), for a development of this theme.

28. ILO Philippines Report, pp. 339ff.

29. See, for example, P. Williams, "Lending for Learning: An Experiment in Ghana," *Minerva* 12 (3) (July 1974).

at present. And the truth is that there is no possibility of Tanzania being able to increase the proportion of the national income which is spent on education; it ought to be decreased. Therefore, we cannot solve our present problems by any solution which costs more than is at present spent, in particular, we cannot solve the "problem of primary school leavers" by increasing the number of secondary school places.<sup>30</sup>

We can control secondary and higher education directly by admission ceilings, or indirectly by higher private costs. But there are still subtler indirect means of making upper secondary and higher education less attractive to students. For example, the ILO Kenya Report recommended postponement of entry into university courses by two or three years, with eventual admission being conditioned on evidence of work experience and community service. Universities in Kenya would make the final selection of students as in the past, but they would now do so on the basis of examination results and employers' reports, and full credit would be given for part-time courses attended while working.<sup>31</sup> Since then, the idea of postponed entry into higher education has been taken up elsewhere, as in Tanzania, Zambia, and Ethiopia. There is hardly any doubt that postponed entry, particularly for a period as long as two or three years, would serve to discourage some students from taking up higher education who otherwise would have done so, not to mention its effect in strengthening the motivation of students who did reenter the educational system.

The case for expanding primary education at the maximum possible rate is as strong on economic grounds as it is on social and political grounds. There is some scope for cost-saving measures in primary education itself, but these could finance only a small part of the expansion required to achieve universal primary education. The bulk of the resources will have to come from the contraction of secondary and higher education. —And as long as a year of higher education costs 100 times as much as a year of primary education—a median figure for Africa and Asia—even a marginal shift of resources from tertiary to primary education could work wonders in increasing enrollments in first-level education. It has been calculated that in six African countries, primary enrollment ratios could be raised to 100 percent overnight merely by shifting 20 percent of current educational expenditure on secondary or higher education to primary education.<sup>32</sup> To achieve such a shifting of resources throughout the Third World remains a primary objective of educational planning.

30. J. K. Nyerere, *Education for Self-Reliance* (Dar es Salaam: Ministry of Information and Tourism, 1967), p. 14.

31. ILO Kenya Report, p. 242; and Republic of Kenya, *Sessional Paper on Employment* (Nairobi: Government Printer, 1973), p. 49.

32. UN-ECA, *Survey of Conditions in Africa*, pp. 96–97.

## QUALITATIVE REMEDIES

We turn now to a wide class of policy reforms, all of which travel under the general label of "vocalization of education." The general theme which runs through all these reform proposals is the failure of the formal educational system in the Third World to be oriented to "the world of work": in primary and secondary education, teaching is almost exclusively geared to the next stage of education, ignoring the large proportion of children who will enter the labor market after completing the cycle in question; education is academic, bookish and obsessed with examination questions; it enforces traditional social values that accord low prestige to manual work and self-employment; and in consequence, it renders students unemployable except in white collar occupations in the modern, organized sector, and sometimes not even in those. The root cause of educated unemployment in this view, therefore, is the content of formal education. The theory that lies behind the vocationalization movement has been widely endorsed throughout the Third World, and there is hardly a country in Asia and Africa which has not made earnest efforts to "vocalize" education. Many, but not all, of these efforts are concentrated at the secondary stage, and they have run all the way from the creation of special secondary vocational schools, to the introduction of vocational tracks in comprehensive high schools, to the addition of "work experience" or "practical arts" in all years of secondary and even primary education, to the planned allocation of students in higher education between science and liberal arts degrees. In rural schools, these proposals have taken the form of calling for a revision of the curriculum, either to include the teaching of agricultural science, or at any rate to instill an agricultural bias into the teaching of all subjects; sometimes it is recommended that a garden-farm be added to each school or, alternatively, that all children should engage in some practical farming as part of the schedule.

A brief review of Asian experience in this field will serve as a background for a critical discussion of these proposals. The Indian Education Commission of 1964-66, the last influential review on a major scale of the problems of Indian education, recommended that by 1986 some 20 percent of all enrollments at the lower secondary level and some 50 percent in the upper secondary level should be in part-time or full-time vocational and professional courses, but they failed to indicate precisely how this was to be accomplished. Even more to the point, they recommended the introduction of "work experience" as an integral part of education at all stages. They defined work experience as "participation in productive work in school, in the home, in a workshop, on a farm, in a factory, or in any other

productive situation," and explained that it would involve "earning while learning";<sup>33</sup> a pilot project to adopt "work experience" in schools has been in operation in the State of Maharashtra since 1971, but no results have yet been published.<sup>34</sup> Pakistan announced a plan in 1972 to introduce workshops in all middle schools so that "pupils may engage in activities such as weaving, book-binding, wood-work, blacksmithy, leather-work, food preservation, home management, etc., related to the local agricultural/industrial environment"; these changes in middle schools are designed to complement work-oriented curriculum changes in elementary education.<sup>35</sup> In Singapore, it was recently proposed that one-third of all students in the third and fourth years of secondary education should enter technical secondary schools, which combine academic education with technical training in broad basic skills.<sup>36</sup> The Presidential Commission to Survey Philippine Education recommended "that high priority be given to the provision of technical and vocational education and training programs in order to meet current and projected needs for trained manpower in developing society."<sup>37</sup> It proposed not only to increase the number of specialized vocational secondary schools but also to lengthen the vocational track in general high schools from two to three years. The last proposal has been rejected, but the Philippine government has just made vocational education compulsory in all years of the four-year high school program, leaving students the option in the last two years of further increasing the amount of vocational shop courses in the schedule. Similarly, Sri Lanka has replaced O-level subject examinations at the end of the secondary cycle with a National Certificate of Education, and the new certificate includes the testing of competence in a number of manual skills.

These brief descriptions are perhaps sufficient to convey a flavor of the activities in Asia in the area of vocational education. It is apparent that the phrase "vocational education" may cover shop courses, work experience, prevocational training, and proper vocational education as such. The line of demarcation among these is hard to draw, but it must be drawn if the

33. Education Commission, *Education and National Development, Report of the Education Commission 1964-66* (Delhi: National Council of Educational Research and Training, 1971), pp. 350 ff.

34. But see E. Staley, "Work-Oriented General Education," *International Development Review* 16 (1) (1974).

35. Government of Pakistan, *The Education Policy 1972-1980* (Islamabad: Government of Pakistan, 1972), p. 7.

36. D. H. Clark, "Manpower Planning in Singapore," *Malthyan Economic Review* 16 (2) (October 1971):195.

37. Presidential Commission to Survey Philippine Education, *Education for National Development*, p. 88.

desirability of expanding vocational education is to be assessed. The Pakistan concept of shop courses in secondary education is perhaps the simplest to grasp, and such courses exist to a greater or lesser extent in schools all over the world. It is, of course, a striking fact that they are more common in secondary schools in advanced countries than in developing countries, but, in the advanced countries, their purpose is a relatively modest one: it is not imagined that they will serve as any kind of introduction to an occupational environment, but, rather, they are designed to relieve the tedium of cognitive learning and to afford those with little aptitude for academic education some scope for an expression of their abilities. In Pakistan, on the other hand, it is hoped that "the knowledge and skills imparted, attitudes implanted, and the learning methods employed will ensure that those not proceeding to secondary [or tertiary] education can be usefully absorbed into the economy of the local community."

It is indeed doubtful whether an hour or two a day of shop courses can accomplish all these aims. The most that can be said is that they will facilitate post-school vocational training. Even greater doubts are raised by the Indian idea of "work experience" in schools, although they are doubts not so much about its effectiveness as about the feasibility of organizing a scheme of "earning while learning" in thousands of schools for tens of thousands of pupils. A program of work experience embodied in formal schooling is heavily dependent on the enthusiasm of teachers and administrators who would have to be specially trained to monitor children's work activities inside and outside of the classroom. No country, not even the most advanced, has ever succeeded in mounting such a program, and it is even questionable whether a sufficient number of earning activities could be found in any country to keep all 7 to 14-year-olds busy for a few hours a week. There is perhaps scope for this idea in some schools in some areas for certain age ranges, but surely not as a general solution for the academic orientation of schooling in developing societies.

Prevocational education, or "occupational education" as it is sometimes called,<sup>38</sup> seems to be a more relevant idea. The stress in prevocational education is on turning out a *trainable* person, rather than a person whose acquired skills make him immediately employable. The idea is that general education should be augmented with curriculum offerings that focus on attitudes, skills, and knowledge relevant to a selected range of occupations, fairly broadly defined. In principle, this is similar to the proposal to add shop courses to an academic curriculum but, in practice, it goes beyond this by treating shop courses seriously as a learning activity and by grouping them meaningfully for each student. Furthermore, pre-

38. See E. Staley, *Planning Occupational Education and Training for Development* (Delhi: Orient Longmans, 1970).

vocational education aims to supplement an occupational orientation by career guidance and counselling, so that each student has some opportunity to discover his own aptitudes in the light of labor market information. It is precisely the latter component which creates difficulties: few countries in Asia can provide each primary and secondary school with a career guidance officer; in addition, the paucity of labor market data would give career guidance officers little to work with.<sup>39</sup> Lastly, there is the still open question as to how much prevocational education is required to render a student trainable after leaving school, not to mention giving him the opportunity to explore his aptitudes. In some Asian countries, shop courses, or whatever they are called, constitute barely 5 percent of class time; in most countries they constitute at best 10–15 percent of class time at certain grades. The inadequacy of the time allotted to such courses, therefore, makes it impossible to actually realize the aims of prevocational education, even if all the objections mentioned previously fell to the ground.

These depressing facts do not, however, invalidate the concept of prevocational education. The question which must be asked is: is prevocational education a viable idea, and would it be worth expanding the provision of prevocational education as a way of solving the problem of educated unemployment? It will serve to sharpen the argument if this discussion closes by looking at vocational schools as such, about which little has yet been said. It may then be asked whether the criticisms that have been levelled at vocational education strictly defined are or are not applicable to prevocational education.

Most critics of vocational education in developing countries emphasize its costliness, the difficulty of finding suitable teachers to run vocational courses, or the tendency of students to regard vocational schooling as a second-best chance of receiving further education. A more fundamental criticism, however, runs in terms of the poor record of manpower forecasting around the world: it would appear that the demand for precisely specified skills cannot be accurately predicted more than a year or two ahead.<sup>40</sup> Since a cycle of vocational schooling is bound to be as long as three or more years, the preparation of students to take up specific occupations runs the constant danger of being out of touch with the pattern of demand in the labor market. Therefore, a policy of imparting general, academic education may be conceived as a rational device for hedging against the uncertainty of a continually changing economic environment.

39. Only 4,000 of India's 50,000 secondary schools now have a "career's master," and India has devoted more effort to building up a system of vocational guidance than other countries in Asia.

40. For the evidence, see *The Practice of Manpower Forecasting. A Collection of Case Studies*, edited by B. Ahamad and M. Blaug (Amsterdam: Elsevier, 1973).

To these considerations the notion may be added that education renders students employable primarily by inculcating definite behavioral traits and only secondarily by imparting cognitive knowledge; in most cases, it might be argued, the social and communicative skills that employers value are much more efficiently fostered by academic than by vocational education. This does not deny the case for accelerated training courses provided on a part-time basis after working hours, or even on a full-time basis for several months in the year in a rural out-of-school context. Nor does it deny the case for "vocationizing" secondary school curricula, if what is meant thereby is the provision of some work-oriented shop courses, combined with take-home projects of a practical kind. But to ask schools to prepare students to take up clearly defined occupations is to ask them to do what is literally impossible. The most that schools can do is to provide a broad technical foundation for on-the-job acquisition of specific skills.

There is very little hard evidence to back up this case against formal vocational schooling. It is true that the available tracer studies of the graduates of vocational and academic secondary schools generally reveal little difference in the unemployment rate between the two groups. Nevertheless, what evidence there is is so thin that little is gained by examining it. What is clear is that vocational schools are much more expensive to operate than academic schools; thus in that sense, the case against them is made if they are only as effective as academic schools from the standpoint of the labor market. They must be *more* effective if they are to be judged desirable, and this much has never been convincingly demonstrated.

So, on balance, the case for vocational schooling appears to be weak. However, the same reasons that throw doubt on vocational schooling only serve to strengthen the case for prevocational education. However, while endorsing prevocational education as "good education," a warning is necessary against the belief that it is capable by itself of fundamentally changing pupils' attitudes to manual and clerical work. Schools make only a marginal contribution to the prevailing ethos of a society, and, while this is no reason for not trying to make an impact, the history of educational experiments around the world cautions against optimism about such efforts. In particular, there is no evidence whatsoever that schooling can foster the desire to take up self-employment, thereby creating jobs in the literal sense of the term. There is a vast literature on entrepreneurship, but little of it implies that schools have much to do with the making of entrepreneurs.<sup>41</sup>

The issue of "vocationization" of education takes on special force when considered in the light of the needs of the rural sector. There is broad

41. This question is explored at greater length in Blaug, *Education and the Employment Problem*, pp. 53–55.

agreement among Asian countries that there is little merit in actually teaching agricultural science in primary and secondary schools; instead, an agricultural bias ought to permeate the general curriculum. The Indian Education Commission of 1964–66 summed up the prevailing view:

The introduction of agricultural education at the primary level is not, in our opinion, likely to achieve, by itself, the objective of inculcating a liking for agriculture as a way of life or of halting migration of rural people from the land. . . . The same broad conclusion will be valid at the lower secondary stage also. It has been the opinion of most people contacted by us that the training given in institutions of formal education does not lead to vocational competence. Farming implies hard work and mature judgement and the age group concerned (13+ to 16+) is neither physically nor mentally prepared for this. We also think that over-specialization at an early age is not at all desirable. . . . This does not mean, however, that the school system till the end of the lower secondary stage has no contribution to make to the development of agriculture. On the contrary, we believe that some orientation to agriculture should form an integral part of all general education. . . . We therefore recommend . . . all primary schools . . . should give an agricultural orientation to their programmes . . . orienting existing courses in general science, biology, social studies, mathematics, etc., towards the rural environment.<sup>42</sup>

The difficulty with this policy is that of extending it to urban schools, because in towns, an agriculturally biased curriculum is regarded as alien by both students and teachers. On the other hand, to provide an agricultural orientation to the curriculum of rural schools but an industrial orientation to the curriculum of urban schools creates a sense of second-class citizenship in rural areas, which is likely to encourage still further an exodus to the towns. This remains an unresolved dilemma in most developing countries. Although these are all basically agricultural economies, they are also countries where much of the growth that is taking place is concentrated in cities. In other words, urban growth is the dominant feature of social and economic development in all these countries; in these circumstances, it is virtually impossible to reform education in the direction of "ruralizing" the curriculum. What would be required to give bite to such a policy is a wholesale program of rural mobilization as the centerpiece of a development strategy. If all the planning efforts of a country were focused on the rural sector as the priority sector, the idea of "ruralizing" the curriculum of both rural and urban schools would call for very little extra effort and would indeed be a natural by-product of such a develop-

42. Education Commission, *Education and National Development*, pp. 658–60.

ment strategy. But so long as the economic advantages of urban life are in fact much greater than rural life, mere changes in the educational content of rural schools will neither stem the exodus of school leavers from rural areas, nor bring about an improvement in agricultural productivity. That is not to say that all efforts to ruralize curricula should now cease. Such efforts are part and parcel of a larger design to place increasing emphasis on the rural sector in development planning. It is merely to warn that curriculum reform in the direction of "ruralization" cannot be expected to work wonders in the near future.

The current debate about curriculum "relevance" is not a new one to the African continent; in Africa it goes back to the first half of the nineteenth century. In 1842, for example, a Select Committee of the British Parliament noted that in Ghana no efforts had been made to offer agricultural instruction, or to establish school farms, and recommended that these deficiencies be made good. Similarly, a report from the Educational Committee of the Privy Council, circulated to the British colonies in Africa in 1847, recommended the establishment of "industrial schools" with the objectives of teaching the rudiments of health care, sanitation, handicrafts, and agricultural techniques suitable to the local environment. The first Education Ordinances for Sierra Leone (1881) and Ghana (1882) included provision for the establishment of such schools, and during the last decade of the nineteenth century, many of the mission schools in those countries established agricultural plots where students spent considerable time each week doing manual work. Similar innovations occurred in East Africa in the early part of the twentieth century, as in Tanzania, where "native authority schools" from 1928 onward introduced agriculture, carpentry and tailoring into the timetable. Such initiatives were applauded by the Phelps-Stokes Report of 1922—the first comprehensive report on education in Africa—which strongly emphasized the need for vocational rural education in primary schools. However, all these early experiments failed in the sense that they were eventually abandoned. In most cases the climate of popular opinion was against them. The examinations were set and administered by bodies in the metropolitan countries, and all modifications of the syllabus in the direction of practical studies were seen as a digression, a threat to standards elsewhere in the curriculum, and a deliberate attempt to give second-class education to Africans. Over the hundred years or so up to 1960, the same pattern has been repeated in many African countries. Local or even national initiatives in practical education were generally shortlived and always ended in a return to the teaching of the standard academic subjects as determined principally by the nature of public examinations.

This is not to say that there has been no progress in curriculum development in Africa. On the contrary, and particularly since independence,

there has been a significant shift away from the content and subject structure of curricula that were imported from Western countries. Increasingly, the official medium of instruction is the *lingua franca*, and in some cases even the *lingua mater*, at least during the primary stage of education. This necessitates the production of textbooks and materials in many different languages—eleven in the case of Ethiopia and twenty in the case of Zambia, to take two examples. Similarly, the topics treated in subjects like history, geography, and social science are becoming increasingly localized in most countries. Examinations, now under local rather than metropolitan control, have been redesigned to reflect these changes in the subject content of the curriculum.

Despite this innovative attitude to traditional curricula, however, the introduction of practical subjects has never met with great success in Africa, at least when limited to particular schools. The new view, however, is that the effort to integrate education and production may prove successful if approached at the national scale for the entire educational system. Such thinking is echoed in the World Bank's new proposals for "basic education."<sup>43</sup>

In brief, the World Bank argues that universal primary education in developing countries can only be achieved by providing a new, flexible, low-cost education called "basic education" as a supplement to standard primary schooling, so that those children and adults who have failed to gain access to the existing system will nevertheless be provided with the 3 Rs, plus some minimum functional skills. Some, if not all, of the elements of "basic education" are already taught in many developing countries in a wide variety of nonformal education programs. Education that is provided in farmers' training centers, community education centers, rural education centers, literacy programs, and even settlement schemes, includes important elements of "basic education" as described above.

The growing disillusionment with the quality of primary and secondary schooling, together with the impossibility in many countries of ever absorbing all their products in the modern sector, have increased the appeal of basic education programs. Basic education has the advantage of being designable to fit the specific needs of rural communities. It can be shorter, more functional, and, it is argued, cheaper than the education that is provided within the orthodox school system. Since basic education courses generally do not involve certification of students, it is widely believed that they represent a means whereby useful attitudes and skills can be developed without at the same time encouraging aspirations for gainful employment in the modern sector.

43. IBRD, *Education. Sector Working Paper* (Washington, D.C.: World Bank, 1974), pp. 29–30.

But there are real dangers in the basic education approach. The establishment of a dual education system, comprising standard schools and colleges for a minority of the population and basic education programs for the rest, would run directly counter to the aim of equality of educational opportunity. Governments following such a strategy are open to the charge that their policies are institutionalizing existing inequalities among social groups in the community. This is, indeed, the major reason why, historically, approaches very similar to basic education have generally failed in Africa and elsewhere. Though the basic education program may be popular in its early stages, students and parents quickly come to regard such schemes as a temporary expedient that should be replaced by primary schooling at a later date. If this does not happen, basic education soon becomes a symbol of discrimination against rural people and the program begins to collapse.

Besides, it is very doubtful that basic education would, in fact, be cheaper than the rock-bottom costs of an ordinary primary school. A teacher facing a mixed class of children and adults would have to be more experienced or better trained than the average primary school teacher and would, therefore, be more expensive. Most primary schools in Africa do not, in fact, succeed in teaching children more than reading, writing, and arithmetic, yet basic schools are supposed to achieve that, in addition to knowledge required for running a household and bringing up a family, not to mention functional rural skills. Even if this were possible, it strains credulity to believe that it would be an equally effective education.<sup>44</sup>

44. In the words of one commentator: "Though in the literature on the subject basic education is often advocated as a means of reducing the costs of education, there is very little analysis of the ways in which this might be achieved. It is well known that the recurrent costs of primary schooling are mainly determined by the level of teachers' salaries and by the teacher-pupil ratio. Thus, the costs of basic education schools would only be lower if classes were larger (or if teachers taught more classes) or if salaries were reduced. For the latter to be achieved—unless the salary structure as a whole were changed—the calibre of the teachers would almost inevitably be lower than in orthodox schools. In any event, . . . if the costs of basic education were less than orthodox schools, it seems likely that the quality (and therefore equality) would be similarly reduced"—(C. Colclough, "Basic Education—Samson or Delilah?" *Convergence* 9 (2):46. In a similar vein, another critic of "basic education" has observed: "Although a *non-competitive* substitute for the primary school might be feasible in areas of low demand for schools, in areas of high demand and inadequate supply it would probably be workable only either at a greater cost or at a greatly lesser effectiveness than the primary school itself. Even though such an institution might present itself as a custodial holding centre, willing to care for a child constructively until a primary school place becomes available, the problems of acquiring trained staff, an adequate staffing ratio, attractive equipment to stimulate learning, would more than likely rule it out of court"—

Despite all these arguments against basic education, many governments in Asia and Africa are undoubtedly attracted by the general thinking that lies behind the drive for basic education. Algeria, Tanzania, Zambia, and India are all reforming their educational systems to include large elements of the basic education philosophy. On a less comprehensive scale, Upper Volta, Senegal, Ethiopia, and Sri Lanka have instituted experimental basic education programs for out-of-school youths which emphasize vocational subjects. Community schools, that is, self-sufficient rural schools that are closely linked to their local communities, are being developed in a range of countries, including Ghana, Zaire, and Tanzania. A theme that recurs again and again in all these reforms is the view that education and production ought to be closely linked and, indeed, that the school should become a productive unit. This is generally seen as having two advantages. On the one hand, the integration of education and production, and particularly the possibility that schools can begin to market products for sale, means that some of the costs of running the schools can be subsidized by this production and hence that the total costs of expanding the school system can be greatly reduced. On the other hand, the integration of education and production is expected to discourage the attitude of students which leads them away from rural areas in search of wage employment in the cities. In short, it is hoped that this new type of school will minimize the alienation of students from their home community and will encourage aspirations for self-help and community work.

The country that has had most experience in these moves to incorporate "earning while learning" into the school curriculum is Tanzania. Although the Tanzanian experience is relatively recent, a number of lessons are already beginning to emerge.<sup>45</sup> For present purposes, the main lesson is that neither students nor their parents will treat even compulsory practical school work seriously unless doing so improves the chances of progression within the school system. In Tanzanian primary schools, the criterion of a subject taught in the curriculum is a perceived connection of the subject with the daily activities of people in the neighboring area. Though the amount of time devoted to practical work varies from school to school, the majority of schools in rural areas are involved in agricultural work, while poultry-keeping and other activities are practiced in urban schools. But systematic evaluations of these curriculum innovations in Tanzania have shown that the vocational aspects of school life are not

J. Oxenham, "Reflections on the 1974 Education Sector Working Papers," *Prescription for Progress? A Commentary on the Education Policy of the World Bank*, edited by P. Williams (London: University of London Institute of Education, 1976), p. 43.

45. See UN-ECA, *Survey of Conditions in Africa*, pp. 124–28.

taken as seriously as the academic side for the simple reason that the former are not at present assessed in final examinations.<sup>46</sup> This deficiency is recognized by the authorities in Tanzania, and they intend in future to test the abilities of students in vocational subjects as part of the Primary School Leaving Examination; they also plan to reduce the power of the examinations by introducing greater dependence upon continuous assessment methods.

Tanzania's experience demonstrates the naivety of believing that the problem of educated unemployment can be solved merely by curriculum reform. The question thus becomes whether or not changes in curriculum, together with changes in selection systems embodied in new types of examinations, are capable of having an impact on the school leaver problem. The evidence here is not conclusive, if only because no African country has yet had experience with this type of comprehensive reform. It is clear, however, that a change to alternative selection methods will introduce new problems. Continuous assessment methods tend, on balance, to be less "objective" than formal written examinations because they give scope to teachers' social biases in rewarding compliant and obedient students. In other words, there are reasons to believe that the abolition of terminal examinations and their replacement by continuous assessment would aggravate the tendency of academically inclined students to forge ahead of those who are more practically oriented.

Having such considerations in mind, the ILO Employment Mission Report on Sri Lanka came up with a radically new proposal for examination reform, namely, to replace the old achievement tests in secondary schools by aptitude testing. For example, the Ministry of Education might offer a one-week radio and correspondence course on an announced subject towards the close of the academic year; all students in secondary schools would devote that week to studying the subject, and they would then be examined at the end to see how much of it they had mastered; their mark on this test would then be entered on their record cards as a supplement to their standard examination score, and selection for higher education would depend on both marks; similarly, private and public employers would have access to both marks.<sup>47</sup>

46. The ways in which student pressures prevent subjects that are not to be examined from being taught or studied effectively are described more fully for Kenya by K. King, *Primary Schools in Kenya: Some Critical Constraints on their Effectiveness* (Nairobi: Institute of Development Studies, Discussion Paper No. 130, 1973). For a general analysis of the "backwash" effects of examinations on the content of schooling in the Third World, see R. P. Dore, *Deschool? Try Using Schools for Education First* (Brighton: Institute of Development Studies, University of Sussex, Discussion Paper No. 6, 1972).

47. ILO Report, pp. 139-40; also ILO Kenya Report, p. 243.

The principal advantage of this scheme is that it would create a measure of educational achievement which could not distort the curriculum that led up to it; not knowing the subject that would be announced, teachers could not drill students beforehand in basic information about the subject; it is true that they could still drill them in the techniques of summarizing information about any subject, but that would be all to the good. Secondly, this scheme would yield a score which comes much closer to measuring a student's basic aptitude and intelligence than the results of a standard examination. Thirdly, as countries gained experience with this new testing device, its weight in a student's overall score could be gradually increased; as the weight of traditional examinations declined, the whole of the curriculum during the secondary stage would then be liberated for creative learning divorced from the necessity of passing examinations. Lastly, the idea could be adopted without any additional investments other than those involved in providing a one-week radio and correspondence course plus the processing of an additional set of test scores.

The possible objections to this attractive proposal are recognized and discussed in the Sri Lanka Report. Examinations perform three functions in the school system: (1) certifying the possession of certain competencies and attributes for purposes of being hired in the labor market; (2) predicting successful performances in the next cycle of education; and (3) ensuring attendance and enforcing discipline in the preceding cycle of education. It is precisely the latter which gives rise to doubt. The Sri Lanka Report considers the problem of "the carrot and the stick" and concludes that this particular function of examinations must be repudiated as much for the sake of teachers as for the sake of students.

Assuming that teachers would accept increasing reliance on aptitude rather than achievement tests, there is hardly any doubt that the growing tendency to demote the traditional examination would have a liberating effect on the process of education. What is much more questionable is whether it would succeed in rendering secondary education terminal. The trouble is that the correlation between the marks on the two types of tests, while far from perfect, would probably be very high. The type of student who scores well on a traditional achievement test would also score well on a written aptitude test. Unless the aptitude test involved making things with one's hands, as well as relatively culture-free questions testing reasoning ability and spatial relationships, it would largely measure the same competencies as an achievement test. Since achievement testing has never discouraged students from wanting to stay on to acquire higher education, aptitude testing with results highly correlated with those of achievement testing would fail to make secondary education terminal.

Besides, aptitude testing would pose a serious threat to teachers for

whom the existing curriculum and examination system has the merit of solving the problem of what to teach and when to teach. In fact, the trouble with all these qualitative reforms that we have been discussing is that every one of them increases the demand made upon teachers in Third World countries. The strength of the orthodox system, at least as far as the teachers were concerned, was that it laid down very strictly the specific information that had to be mastered by students if they were to be successful, both in terms of promotion within the education system and more generally in society at large. The vocationalization of the curricula, the decentralization of syllabi, the integration of production and education, the move away from examinations, all require teachers who are enthusiastic, innovative and highly trained. When we consider the typical rural teacher in an African primary school who has himself had no more than primary education, it is difficult to believe that he will prove equal to the task that will be imposed upon him by the new educational reforms. Even the inservice teacher training courses that are currently planned by Third World governments about to engage on major educational reforms may fail to equip the teaching cadre with the skills and confidence it needs to implement the reforms in question. It is this which may prove to be the Achilles' heel of this new wave of educational reform in Asia and Africa.

A further critical variable concerns the earnings that regularly accrue to persons with advanced levels of schooling in developing countries. The appeal of standard examinations, for example, stems not merely from the wish of students to achieve entrance to higher education. Rather, it derives from the very high earnings and status associated with jobs to which higher levels of education give access. While changes in examination and in systems of selection may be expected to bring educational benefits, it is unrealistic to suppose that such changes will make people content to accept work at very low incomes in rural areas if they believe themselves to be eligible for highly paid urban jobs. In short, as long as employers continue to use the level of education attained as the main criterion for hiring recruits into first jobs, and as long as the existing income differentials between the highest and worst-paid jobs in the occupational hierarchy remain what they are, the phenomenon of educated unemployment and underemployment in Asia, Africa, and Latin America is unlikely to be more than marginally affected by even major changes in the qualitative aspects of education.

#### RECURRENT EDUCATION

The proposal to replace orthodox examinations by aptitude tests is only one of a number of proposals that have been produced by ILO Employ-

ment Missions to promote the "terminalization" of secondary education in developing countries. In both the Sri Lanka and Kenya Reports, achievement testing is linked up with educational selection by quotas and with the concept of postponed or recurrent education. Selection by quotas involves selecting students into upper secondary education by school quotas within each school district; selection within each school quota is then by a mixture of achievement tests. The purpose of selection by quotas is that of equalizing educational opportunities between poor and rich families and between rural and urban districts; in effect, therefore, the quotas will be as much geographical as social quotas, and they are designed to strengthen the selection of students for further education by factors other than examination results. Similarly, both the Sri Lanka and Kenya Reports recommend postponement of entry into university courses by two or three years, with eventual admission being conditional on evidence of work experience or community service. The universities themselves would make the selection as in the past, but they would now do so on the basis of examination results, aptitude tests, employers' reports and teachers' reports, and full credit would be given for part-time courses attended while working.<sup>48</sup> Postponed entry, the reports suggest, would help to cut down on college enrollments and would, in addition, strengthen students' motivation and improve their career choices.

It is apparent that this proposal to postpone entry into higher education by a few years is one version of the general concept of recurrent education, which is now under heated discussion in most European countries.<sup>49</sup> In other versions, higher education is taken on a part-time basis concurrently with employment; it is never completed in one sequence but recurs at intervals throughout a person's working life. The ILO proposal is a relatively modest interpretation of the concept of recurrent education; all that would be called for is greater flexibility on the part of employers in offering part-time work to youngsters and some increased sophistication in the admission procedures of universities.

There is little doubt that to interpose two or three years between completion of secondary education and entry into higher education would reduce the demand for higher education; that is to say, some proportion of secondary school leavers would in all probability lose their incentives to take up higher education. In addition, there is also little doubt that it would alter their aspirations and strengthen their motivation to study if they should decide to return to the educational system. Thus, whether it is believed that educated unemployment is due to excessive education, or to

48. ILO Sri Lanka Report, p. 141; ILO Kenya Report, p. 242.

49. See E. Faure et al., *Learning To Be* (Paris: UNESCO, 1972); International Commission on the Development of Education (Edgar Faure Commission).

a structural imbalance represented by a mismatch between aspirations and opportunities, the impact of postponed entry into higher education is entirely in the right direction. What is much less certain is that the magnitude of the impact will be very large. Here, as elsewhere, experiments are needed to point the way. Sri Lanka has now adopted the concept of a six-month interval between the completion of secondary education and entry into higher education, and the latter is in fact governed by a set of geographical quotas. In that sense, an experiment is now under way, and whatever its results, the ice has now at least been broken.

The ILO mission reports saw the period of postponed higher education as being devoted to either gainful employment or community service. Reference to community service provides an opportunity to say something about the question of out-of-school involvement of youngsters in voluntary social services, or in a compulsory national service, as devices for altering their attitudes to the world of work. A significant example, but only one example, of a voluntary service of this kind is the *Shramadana* (Gift of Labour Movement of Sri Lanka), in which young people work with villagers on such projects as constructing roads, digging wells, improving sanitary facilities, developing water resources and irrigation canals, and providing educational and recreational facilities. In other Asian countries, such organized youth activities as scouting, Junior Red Cross, and National Cadet Corps, which are generally confined to school children, have been extended to cover out-of-school youth. The results have been generally encouraging but the coverage of such programs to date is still very minimal. What it shows, however, is that there is a wide variety of devices available for attempting to alter the values and aspirations of youngsters. It is not true that this can be done only in schools. It may not even be best done in schools. Indeed, in all Asian countries there are vast complexes of activity (which may be bundled together under the label "nonformal education"), which are currently engaged in teaching new skills to out-of-school youths and adults.

#### NONFORMAL AND INFORMAL EDUCATION

The more critical attitude to formal education in recent years has led to new appreciation of the importance and potential contribution of nonformal and informal education. By their very nature, data on these varied, decentralized and often overlooked forms of education and training are partial and inadequate. But it is important to have at least some grasp of the range of activities in these areas, if only to avoid the impression that all or even most education takes place in the formal school system.

"Nonformal education" is defined by the International Council for Educational Development as "any organised educational activity outside the established formal system—whether operating separately or as an important feature of some broader activity—that is intended to serve identifiable learning clienteles and learning objectives."<sup>50</sup> Such programs include youth services, agricultural extension programs, settlement schemes, cooperative training, vocational agricultural training, adult literacy campaigns, and national awareness programs using the mass media. At the risk of some oversimplification, three categories of nonformal educational programs can be distinguished: (1) programs which are designed to upgrade the skills of persons in employment; (2) programs which are organized as a bridge between formal schooling and employment, which usually include some specific vocational training; and (3) programs which are organized as an alternative to formal schooling for those persons who are presently excluded from the school system. Although only fragmentary data on nonformal education are available,<sup>51</sup> it may be useful to indicate something of the range of educational activity within each of the above three categories.

Programs in the first category—those that are designed to upgrade the skills of persons in employment—include on-the-job training and in-service courses of various kinds for workers in the formal sector. Many governments in Asia and Africa have adopted a positive policy towards increasing and improving on-the-job training schemes; in addition to training on the job, a large number of nonformal in-service courses are also provided. These are sometimes run by private employers, but most of such courses are available only in the public sector. Furthermore, many governments in Africa make available a number of places in their technical training institutes specifically for the purpose of upgrading workers during a period of release from employment. In Kenya, for example, under the provisions of the Apprenticeship Training Scheme, workers spend part of their time in training courses at the National Industrial Vocational Training Centres. And most of the training at the polytechnics in Kenya comprises in-service courses for people who are sponsored by their employers either in the public or the private sector. Many other governments (including those of Ghana, Zambia, Botswana, and Swaziland) have similar

50. P. H. Coombs, R. Pressner, M. Ahmed, *New Paths to Learning for Rural Children and Youth* (New York: International Council for Educational Development, 1973). See also P. H. Coombs, M. Ahmed, *Attacking Rural Poverty. How Non-Formal Education Can Help* (Baltimore: Johns Hopkins University Press, 1974).

51. But see J. Sheffield and V. Diejomaoh, *Non-Formal Education in African Development* (New York: African-American Institute, 1972), for a useful survey of African nonformal programs.

schemes. Most of these government training courses are "nonformal" in our terms; that is, they are organized in response to specific occupational needs, they lie outside the purview of the ministry of education, and they rarely lead to the acquisition of certificates. In this sense, they contrast with many of the preservice training courses that fall more squarely within the formal training system.

Finally, one of the most important and widespread forms of nonformal education in the first category is the agricultural extension service. In most countries, this service is responsible for encouraging farmers to apply new methods of cultivation and animal husbandry; it aims to increase the use of fertilizers, insecticides, manure, draft animals, and equipment, and to promote the introduction of new crops. In the mid-1960s, expenditure on agricultural extension in Tanzania accounted for up to one-third of the recurrent budget of the Ministry of Agriculture, and up to three percent of total government recurrent expenditure.<sup>52</sup> This experience has also been fairly typical of other countries. Extension services are thus an extremely important item of nonformal education in terms of the financial resources allocated to them.

The second category of nonformal education covers pre-employment training programs. In Africa, many of these would be included in the category of formal rather than nonformal education. Apart from the more usual examples of vocational training—those for teachers, nurses, artisans, technicians, and so on—there is a wide range of other preemployment, nonformal programs. These programs are offered by both government and private sector agencies, particularly the latter. Many recently established programs have their origins in the attempt to provide some kind of vocational opportunity for primary school leavers unable to find modern sector jobs. A Kenyan example is the training given by the Christian Industrial Training Centre in Nairobi. The majority of such schemes, however, have been conceived from the very beginning as training programs which promote a transition to self-employment rather than wage employment in the modern sector. Training programs for weaving, cottage industries, carving, carpentry, building, electrical trades, mechanics, and almost every other conceivable, marketable low-level skill have appeared in Africa over the past twenty years. As in the case of the Kenyan Village Polytechnics, many of these programs are explicitly organized on a self-help basis, using student labor and local materials. Though often highly structured, such programs are characterized by low recurrent costs, by pupil-teacher ratios higher than in the formal training system, by the absence of formal require-

52. J. King, *Planning Non-Formal Education in Tanzania* (Paris: UNESCO-IIEP, 1967), pp. 25-26.

ments for admission, and by the absence of certificates at the end of the program.

In spite of these features, the success of many of these programs still tends to be judged by the number of their graduates who succeed in finding wage employment. This is so because, regardless of the focus of the course on self-employment, the students themselves have their eyes on the training as a means, however remote, of gaining access to a wage-earning job. Furthermore, the emphasis on skill training in these programs ignores all the other, deeper problems that an inexperienced youngster faces in entering the labor market on his own account. Seldom is the major constraint simply the lack of a vocational skill; more frequently, it is a lack of capital, a lack of knowledge concerning marketing possibilities, a lack of business acumen, a lack even of the knowledge of basic bookkeeping practices. In short, these preemployment training courses are addressed to what is, in fact, only one of the shortcomings of a would-be entrepreneur. As the glut of potential and qualified workers seeking entrance to the modern sector increases in Africa, more and more of these schemes are recognizing the inadequacy of the preparation they provide.

The third major category of nonformal education includes programs that are deliberately established as an alternative to formal schooling. African and Asian interest in these second-chance facilities has grown considerably over the last five years. Most of such programs are still on an experimental basis, but their initiation in an increasing number of countries is a portent of the future. These programs have come to be referred to as "basic education," which we have already discussed. The growing disillusionment with the quality of formal education has increased the appeal of basic education programs. Basic education has the advantage of being able to be designed to fit the specific needs of rural communities. Since basic education courses generally do not lead to any certification of students, it is widely believed that they represent a means whereby useful attitudes and skills can be developed without at the same time encouraging aspirations for gaining employment in the modern sector. Their chief role, in Africa at any rate, has been less to provide alternatives to formal schooling for youngsters than as supplements to the school system for adults. Such adult programs are aimed at a wide range of social and economic objectives. They include community development programs, literacy programs, cooperative education and development schemes, and mass campaigns using radio. Radio learning has been most notably used in Tanzania in order to contact groups of largely illiterate people living in rural areas. Other governments, including Botswana and Zambia, have also begun using this approach to the promotion of a limited range of learning objectives in health, nutrition, agriculture, rural development, and civics.

The last comment perfectly illustrates the range and complexity of nonformal education in Africa. While it would be desirable to generalize about its development, and its prospects for the future, it is hard to do so because of the diversity of aims and methods involved. However, it is clear that the main provider of nonformal education in Africa is at present the public sector. Though private initiatives have been of key importance in some countries, resulting (as in the case of the Botswana Brigades and the Kenya Village Polytechnics) in a large student population created without government help or subsidy, these are the exceptions rather than the rule. In general, bearing in mind the importance of agricultural extension, literacy programs, and inservice and upgrading training, the scope of private training schemes is tiny compared with the resources and the people involved in government programs. The initiative for the future development of nonformal education thus lies firmly in governments' hands.

So far comments here have been related to *organized* systems of learning that take place outside the orthodox or formal school system. It is being increasingly recognized, however, that the vast majority of the labor force throughout the Third World learn the skills they need for their livelihood not in the systems of formal or nonformal education, but informally, on the job or in the home. To return to the Kenyan examples mentioned earlier, technical skill training within the formal system is available to only about 5,000 students each year. Thus, only a tiny proportion of the 225,000 primary school leavers in Kenya can gain entry to these programs. It is incorrect to imagine that the remainder are condemned to unskilled manual jobs. On the contrary, a high proportion eventually enter some kind of indigenous apprenticeship arrangement in the informal sector, or acquire skills on the job that eventually promote their transition to self-employment.

In parallel with the attention given to the informal sectors of the economy from the perspective of helping the poorest groups in the economy, there has also been a growth of interest in the role played by informal or indigenous learning systems. The fact that the latter systems provide the gateway to the former is important from an analytic and a policy perspective. Work on informal education is as yet in its infancy.<sup>53</sup> Nevertheless, recent studies for Africa do support the following generalizations: (1) informal education/training is the main vehicle for skill acquisition in a wide variety of skilled and semiskilled jobs, particularly those in the informal and rural sectors; (2) informal artisan training is often closely

53. But see the substantial amount of historical and sociological analysis presented in K. King, *The African Artisan* (Edinburgh: University of Edinburgh Centre for African Studies, 1975), and C. Wallace and S. Weeks, *Success or Failure in Rural Uganda: A Study of Young People* (Kampala: Makerere University, 1974).

similar to the apprenticeship schemes promulgated by governments—fees may be paid by the trainee, and the training period may last over a period of years; (3) informal training schemes tend to promote skill acquisition relevant to local resources and products—*prima facie* they tend to be more usable in a rural environment, or in cases where capital is a key constraint; and (4) informal wage structures are more determined by productivity than by certification—this means that informal learning systems may be more effective as instruments to promote relevant knowledge and skills than the formal system, geared as the latter is to the needs of a formal sector labor market.

These characteristics are now confirmed by studies in a number of countries, and it is clear that the *de facto* importance of informal education has been overlooked in the past. Nevertheless, the importance of informal education from the point of view of government policy relates more to the lessons that can be learned for educational developments in the formal system than to the desirability of governments becoming more involved in these informal learning processes. At present, the best thing that could happen to informal education is that it be left alone, not least because it appears to achieve a wide range of educational objectives more successfully than the formal system. Meanwhile, there is a need to conduct more descriptive research in a variety of rural and urban settings, both to increase our knowledge of the range of skills that are effectively taught informally, and to gain insights concerning the actual and potential linkages to organized systems of learning.

#### AN ACTIVE MANPOWER POLICY

Left to the last is the question of tackling educated unemployment by direct intervention in labor markets. When an economist examines the comprehensive educational reforms that are now under way in a large number of Asian and African countries, the overwhelming impression gained is that the direct links between the educational system and the labor market are still not adequately appreciated in developing countries. Again and again, he will witness countries overhauling their entire educational system without taking steps to alter the prevailing salary differentials by levels of schooling. Even when such countries pursue an incomes policy designed to restrain the upward movement of wages and salaries, no effort is made to monitor and publicize the squeezing of differentials that such a policy frequently entails, as if levels were everything and differentials nothing. There may be circumstances in which governments are powerless to affect the general pattern of rewards in the labor market, at least in the short run,

but any government in Asia or Africa can in fact make significant inroads on the rewards of educated people merely by altering its own hiring and promotion practices, for the simple reason that they are generally a major employer, as in the case of Asia, or a principal employer, as in the case of Africa, of the products of secondary and tertiary educational institutions.

The ILO mission Reports on Sri Lanka and Kenya both place emphasis on policies designed to reduce earnings differentials in labor markets.<sup>54</sup> They take the view that the differentials between unskilled and skilled workers and between less and more educated workers are "excessive," in the sense that they exceed the differentials required to give people an incentive to acquire both skills and education. These excessive differentials produce a high private rate of return to investment in education and thus feed the demand for upper secondary and higher education. Moreover, they distort the motives of youngsters and thus contribute to educated unemployment. For example, a survey of university students in Sri Lanka carried out by the ILO Employment Mission showed that most unemployed arts graduates were willing to consider a job at Rs. 300 per month, which is about half the going rate for university graduates; furthermore, a graduate training scheme which offered 5,000 jobs at Rs. 200, rising in two years to Rs. 400, led to applications from half of the new arts graduates in the country.<sup>55</sup> Clearly, these graduates are willing to work at less than the current salary for university graduates. It is worth noting that the public sector in Sri Lanka pays educated people more than the private sector at every age and, in addition, offers fringe benefits which are more generous than those offered by private industry. No wonder that Sri Lanka university students prefer public sector employment, citing superior fringe benefits, greater job security and more personal freedom as the justification for their preference.<sup>56</sup>

The ILO Kenya Mission Report attacks the problem directly by proposing that the entry points on public pay scales should be reduced by 25 percent for a five-year period, after which entry points should no longer be defined in terms of formal education; however, this suggestion was not accepted by the Kenyan government.<sup>57</sup> Nevertheless, the Kenyan government did accept the principle of working toward a narrowing of skill differentials in the years ahead. Incomes policies, to use a widely accepted shorthand, are now a regular feature of economic policy in a number of

54. ILO Sri Lanka Report, pp. 118-20; ILO Kenya Report, pp. 268-69.

55. ILO Sri Lanka Report, p. 175.

56. *Ibid.*, p. 135.

57. ILO Kenya Report, pp. 268-69, and Republic of Kenya, *Sessional Paper on Employment*, p. 50.

Third World countries, and although they are rarely designed to deal expressly with the problem of depressing the relative earnings of university graduates, they all have the effect of doing so.<sup>58</sup> Nevertheless, even a general incomes policy that narrows earnings differentials in labor markets, and thus effectively saps the private incentive to acquire higher education, is not enough, unless accompanied by specific changes in public sector hiring practices. As the principal employer of the bulk of educated people, Asian and African governments share a heavy responsibility for the excessive growth of the upper levels of the educational system. In most countries, they tie salary scales rigidly to educational qualifications; they promote almost automatically by age, with little resort to performance rating; they fail to provide job specifications and fail to practice scientific job evaluations; and they invariably provide absolute tenure and generous fringe benefits. Even if they paid graduates no more than secondary school leavers, this would be enough to create a large demand for university education. In short, the recruitment and promotion policies of the public sector in Asia and Africa have done much to foster "the diploma disease." Large salary differentials and free or almost free university education have done the rest.

#### A COMPREHENSIVE STRATEGY

By now, a formidable list of policy proposals has been collected for an attack on the problem of educated unemployment in developing countries: they range from quantitative restrictions on entry at various levels; to a rise in the private costs of secondary and higher education joined to income-related scholarships and loans to equalize educational opportunities; to structural reforms allowing flexibility for a number of different routes through both formal and informal education; to "vocationalization" of curricula and the reform of the examination system; to a strengthening of out-of-school provision; and, lastly, to an incomes policy or at least a change in public sector employment practices. All of these may be expected to have an impact on the employment problem, but, in the present state of knowledge, it is not possible to know which of these would be more or less effective. It may be concluded, therefore, that the hope of gearing education to employment opportunities demands a multi-pronged attack. Apart from the fact that changes affecting the labor market should precede, or at

58. For some African evidence, showing that Egypt, Ghana, Tanzania, Zambia, and Kenya have all succeeded in recent years in squeezing earnings differentials by the device of freezing top salaries and raising statutory minimum wages, see UN-ECA, *Economic Conditions in Africa*, pp. 113-15.

least go hand-in-hand with, educational reforms, it is evident that educational remedies to the problem of educated unemployment have to be considered as a whole. The need is for a comprehensive educational strategy, embodying all the reforms which have been noted.

The precise weight assigned to each component of the comprehensive attack on the problem of educated unemployment will vary from country to country. As between the formal system of schooling and informal educational activities, between universal primary education and selective secondary education, between comprehensive schools and specialized technical institutes, between regular university degree courses and short career courses, between a uniform, urban-oriented curriculum and a "ruralized" curriculum, between an uninterrupted learning stage and recurrent education with "sandwiched" periods of work and learning, not to mention the choice among fees, scholarships and loans, the alternatives are so numerous that the choice must ultimately depend on each country's national objectives. In these circumstances, a few, but only a few, generalizations by way of a conclusion are ventured.

The greatest educational need for the Third World, and particularly for countries in Asia and Africa, is still universal primary education. The large numbers of children who are not in school, either because they never entered one or because they have dropped out of school too early, have to be given the benefit of a minimum quantum of education. This first stage of education should be both free and compulsory. The period of such compulsory primary education should in practice be as long as a country can afford, although the tenets of educational psychology would demand that it last a minimum of 7 to 8 years. Universal primary education, followed by selective education to satisfy identified manpower needs in modern sector employment, is not a new policy in Asia or Africa. But where it has been operative hitherto, the tendency has been to select students only in respect of certain high-level professions, allowing the rest either to drop out of the system or to be relegated to less expensive and unfocused courses of study. The current situation in the Third World demands a system of postprimary education which is accessible to all those who want to pursue full-time, part-time, or "own-time" education, not as a right but as a privilege. In general, everyone should pay for postprimary education unless they can show that they are too poor to do so. Alternatively, students may be lent their fees to be repaid out of future earnings, if they have earnings and not otherwise. Some countries may want to combine low fees and minimum loans with some scholarships for particularly disadvantaged groups. But, in general, countries must be prepared to shift an increasing burden of the costs of postprimary education to parents. Universal primary education in the Third World cannot be achieved unless the locomotive of higher educa-

tion can somehow be slowed down, and there is little chance of that unless it can be made more expensive to students and their families.

The content of education must move gradually towards the ideal of comprehensive schooling for everyone that includes "shop courses," "practical arts," "prevocational education," or whatever it is called, whose purpose it is to introduce children to manual work without pretending to prepare them for a specific job, or even a range of specific jobs. Examinations ought to contain an increasing number of objective questions, unrelated to the previous syllabus, and aptitude tests may be gradually introduced alongside standard examinations of the old type. A period of work experience as an essential prerequisite to admission in higher education ought to become universal in developing countries (not to mention developed ones). And the role of relating education to the so-called manpower requirements of a growing economy should fall increasingly on informal education and on training schemes offered on a part-time or short-term basis. In general, new attention ought to be given to the location of educational activities as between town and country. Future economic planning will, in any case, be focused on the rural sector, and it is rural education, and particularly out-of-school education for rural youths and adults, that must now become the linchpin of educational policy in Asia and Africa.

The policy proposals outlined above are designed to affect the quality of population. They may also contribute to the solution of the quantitative population problem in the Third World, but that cannot be their principal motive. The effect of formal schooling, whatever its magnitude and character, has only indirect, long-term influence on the birth rate, and hence the rate of population growth, in particular countries.<sup>59</sup> In consequence, no specific education and training policies can be derived from a country's official programs aimed at reducing the population growth rate. It is true that UNFPA, FAO, WHO, and UNESCO have long been concerned with both school and out-of-school programs of what is called "population education," namely, the insertion in school curricula and in formal youth training programs of the study of population dynamics and policies.<sup>60</sup> But, as yet, the number of nationwide population education programs is small: although there have been different programs in more than fifty countries, less than twenty have so far committed themselves to

59. See R. M. Bjork, "Population, Education and Modernization," *Education in National Development*, edited by D. Adams (London: Routledge and Kegan Paul, 1971), pp. 118-45.

60. See UNESCO, *Population Education: A Contemporary Concern* (Paris: UNESCO, 1978).

official national programs.<sup>61</sup> That is no reason for not encouraging the expansion of such programs in future years, but the fact remains that even a massive expansion of population education programs could not be expected to affect fertility rates for many years to come and would in any case absorb only a small proportion of educational budgets around the world. Meanwhile, the vast educational and training problems of Third World countries would still remain unsolved. The argument for better educational planning in the Third World has to be that effective planning would contribute to a wider process of modernization, in which policies aimed primarily at the quality of population complement associated policies designed to affect the quantity of population, which would not necessarily have impact today, or tomorrow, but would, surely, the day after tomorrow.

61. *Ibid.*, p. 28.

## Population Redistribution: Patterns, Policies, and Prospects

L. A. PETER GOSLING

### INTRODUCTION

THE CONCERN with population problems in developing countries has, until recently, focused almost exclusively on overall population numbers and growth and on policies to control fertility in these countries. Now, however, increasing recognition is also being given to the location or distribution of population within nations. Developing countries have become increasingly concerned with the spatial maldistribution of population manifest in such phenomena as overurbanization, rural overpopulation, and the associated problems of rural and urban poverty, unemployment, and urban blight. A wide range of population redistribution policies has evolved to deal with these problems. They include policies to control, restrict, or reverse rural-urban migration; to move "surplus population" out of cities; to control spontaneous, or even planned, population redistribution within rural areas; to develop land settlement projects and such urban projects as squatter eviction, slum clearance, urban renewal, and public housing.

Most of these population redistribution policies evolve in response to specific problems such as poor and landless rural population and urban overcrowding and unemployment. They do not deal with the underlying causes of these problems, which lie in social and economic structures and

This chapter is a summary of a monograph of the same title which incorporates nine individual papers, written by L. A. Peter Gosling, Linda Lim, John Oppenheim, Donald Deskins, Keith Clarke, Theodore Fuller, Abdul Hamid Abdullah, and Maxine Olson, and edited by L. A. Peter Gosling and Linda Lim. The reader is referred to this monograph, to be published in its entirety by UNFPA, for more detailed discussions and extensive footnotes and references. An abbreviated list of references is appended to this chapter.

APPENDIX E: INDUSTRIAL TRAINING PROGRAMS  
OF LATIN AMERICA

In Latin America and the Caribbean area, the following institutions and programs are commonly referred to by their initials or abbreviations.

CINTERFOR -- Centro Interamericano de Investigacion y Documentacion sobre Formacion Profesional (the Inter-American Research and Documentation Centre on Vocational Training), an I.L.O. agency, located in Montevideo, Uruguay.

I.L.O. -- The International Labour Office and the International Labour Organization, headquartered in Geneva, Switzerland.

INA (Costa Rica) -- Instituto Nacional de Aprendizaje (National Training Institute).

INA (Nicaragua) -- Instituto Nacional de Aprendizaje (National Training Institute).

INACAP (Chile) -- Instituto Nacional de Capacitacion Profesional (National Institute for Vocational Training).

INFOP (Honduras) -- Instituto Nacional de Formacion Profesional (National Vocational Training Institute).

INTECAP (Guatemala) -- Instituto Tecnico de Capacitacion y Productividad (Technical Institute for Vocational Training and Productivity).

SECAP (Ecuador) -- Servicio Ecuatoriano de Capacitacion Profesional (Ecuadorian Vocational Training Service).

SENA (Colombia) -- Servicio Nacional de Aprendizaje (National Training Service).

SENAI (Brazil) -- Servicio Nacional de Aprendizagem Industrial (National Training Service for Industrial Apprenticeship)

SENAC (Brazil) -- Servicio Nacional de Aprendizagem Comercial (National Training Service for Commercial Apprenticeship).

SENATI (Peru) -- Servicio Nacional de Adiestramiento de Industria y Turismo (National Service for Training in Industry and Tourism).

SENCE (Chile) -- Servicio Nacional de Capacitacion y Empleo (National Service for Vocational Training and Employment).

SNPP (Paraguay) -- Servicio Nacional de Promocion Profesional (National Service for Occupational Promotion).

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