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9. ABSTRACT

Formal education opportunities in less developed countries have remained unavailable to large segments of the population. Steadily increasing costs, coupled with a growing rural population whose life style is ill-adapted to the urban emphasis of general education technologies, have made other alternatives essential. Nonformal education is appealing in such circumstances for it can reduce costs while relating directly to the daily life of the people. The author illustrates how resources can both be generated and maximized through such techniques as the use of unpaid volunteers, reductions in capital expenditures, and learning during periods when daily economic pursuits are concluded. Two warnings are provided the potential practitioner: nonformal education should not be so skill oriented that transfer to the formal system is impossible, nor should it attempt to include those skills taught within the village as a matter of survival. A cost-effectiveness model is included.

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The Economics of Nonformal Education

FOREWORD

Charles S. Benson

Interest in the further development of nonformal educational systems in the developing nations is strong and rising. Dr. Manzoor Ahmed's volume, accordingly, appears at the right time. Fortunately for the reader, it is most carefully and thoroughly written. I know of no other work that deals so comprehensively with the problems and potentialities of the field.

As an instrument of social policy, nonformal education appeals on two counts: It is thought suitably inexpensive per enrollee, even in those nations that are subject to the twin specters of population pressure *and* poverty; it is in concept a form of education in which the curricula content relates directly to the daily life of masses of people. Let us consider these two points in turn.

Ahmed presents evidence to show that the cost savings of nonformal education reside mainly in reduced expenditures for human time. Many teachers work as unpaid volunteers. Classes and related learning activities can be held when "students" have completed—or are not otherwise engaged in—their daily economic pursuits, thus bringing costs of foregone income down to tolerable levels. But Ahmed warns us that costs of materials of instruction and equipment may be higher per enrollee in effective nonformal programs than in formal programs of comparable general quality. This is an important matter to recognize in designing new nonformal programs.

What of the matter of curriculum? Formal systems of education are widely criticized for their emphasis on developing skills that are salable—and useful—only in the modern sector of developing countries. Nonformal systems are established deliberately to develop skills that enhance life in the villages and the barrios. Two observations come quickly to mind. First, *some* skills useful in the villages and barrios are being taught now and have always been taught, regardless of whether government is interested in the process, for otherwise the masses of the population could not survive. Education planners should try to learn whether the nonformal systems that

have gained government backing are superior to what might be called "natural education." Second, the farther apart the curricula of formal and nonformal education are forced to be, the less likely it is that graduates of nonformal courses can transfer into the formal system. This is bound to lessen the attractiveness of the nonformal system to potential enrollees, which is to say that *exclusive concentration* on local skills may not be a good idea.

Ahmed is in my view properly skeptical about using quantitative measures of cost-effectiveness to regulate the further development of nonformal education. On the other hand, he is conscientious in noting the wide range of types of cost, indicators of effectiveness, and measures of benefits. I do not know the extent to which the assessment of the value of nonformal education will be made rigorous, but at the present time I would not wish to undertake any assignment to study nonformal education without Dr. Ahmed's volume in hand.

ACKNOWLEDGMENTS

This volume has been prepared as a part of a series of studies dealing principally with the finance and efficiency of all forms of education sponsored by the Program in International Education Finance, School of Education, University of California, Berkeley. Financial support for the study came from a 211d grant made to the Program by the United States Agency for International Development. A major part of the work for the study was done in the summer of 1973 when I first joined the program on leave from the International Council for Educational Development.

I am grateful to Professor Guy Benveniste, principal investigator of the program, for making this study possible. I also owe a special debt to Professor Charles Benson, whose guidance, encouragement, and unfailing helpfulness I have been fortunate to enjoy for many years.

My intellectual debt to my colleagues in ICED, particularly to Philip H. Coombs, is beyond measure. The materials included in this volume are drawn almost exclusively from my work at ICED during the past three years. My colleagues, of course, are not responsible for the inadequacies of this volume.

Barbara Israel has carried out the arduous editorial task of making the manuscript readable. Debra Hyde has been indefatigable in typing and retyping the manuscript.

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1

INTRODUCTION

It is obvious that there are very large numbers of people in the developing countries, particularly in rural areas, who are deprived of opportunities to satisfy their minimum essential learning needs. This deprivation is concentrated heavily among out-of-school children, youths, and women.

It is also obvious that so long as the educational efforts of countries are confined mainly to formal education, and educational resources devoted primarily to formal programs, there is little prospect in most developing countries for opening up educational opportunities on a large scale. Moreover, if that course continues, there is no possibility in any of the developing countries of making significant progress in building a national learning system that can meet the population's essential learning needs.

Some developing countries—for example, Jamaica, Sri Lanka, and Thailand—have made great progress in making formal primary education widely available and in making the population literate. With harder efforts and determination, and probably without having to go beyond their means, such countries will be able to make primary education universal and to eliminate illiteracy. But these efforts, by themselves, are only part of the answer. Formal primary education, even when combined with literacy courses for adults, is not designed to meet all the diverse learning needs of any group of people—least of all those of the deprived rural populations.

Most developing countries, however, are not in the position of being able to make even primary education universally available in the foreseeable future. These countries have to search for other feasible alternatives that would create opportunities for meeting the essential learning needs, including literacy and numeracy, of the largest number of people in the shortest time.

There should be no illusion that the broadening of the scope and purpose of education can be achieved without devoting more resources to education in any of the developing countries. Greater efforts for the mobilization of financial and nonmonetary resources will be needed in all developing countries if they want to make progress in meeting the demands of their populations' minimum essential learning needs.

It is useless, however, to speculate on the amount of additional resources, either in absolute or in relative terms (as a percentage of GNP or of public revenue), that should be spent for education in a particular country.* The increase in resources that is needed or that will be feasible to raise in any particular country will depend on how much determination the country has to improve the well-being of its rural people, how it reformulates its development priorities and goals, how it defines the minimum essential learning needs in conformity with national development prospects and requirements, and

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*The reasons why such an exercise is fruitless are varied. First, the statistics of national spending on education do not represent the true picture; they often underestimate private spending, costs to the learner, and spending by non-educational agencies for educational activities seldom labeled as educational. Second, the amount of educational inputs in real terms that can be bought for the same amount of money varies among different programs, institutions, regions, and countries. The same amount of spending does not mean the same amount of educational service. Third, the efficiency and effectiveness of educational programs and parts of programs also vary among institutions, regions, and countries. The same amount of spending, therefore, does not represent the same learning achievements or benefits. Finally, not all educational resources can be expressed in monetary terms and many do not show up in educational budgets. Nonmonetary resources are particularly significant in nonformal education, and financial targets for spending cannot take into account certain important educational resources.

what strategy it evolves for meeting those needs. The magnitude of increase needed in most countries will be of the order of at least a three- or four-fold increase in real educational resources within the next decade. This is a feasible estimate, taking into account the untapped potential resources, and it need not imply a 200 or 300 percent jump in national educational budgets. But it will require a massive mobilization of all real resources for education as well as far-reaching changes in the educational structures and processes to make the educational efforts more efficient and effective.

The urgency is greater than ever for new strategies for educational development that will embrace all possible avenues of learning, open educational opportunities of one form or another to all the people, and enhance the contribution of a nationwide learning system to the improvement of the welfare and life prospects of the most deprived segments of society. There is a corresponding urgency to mobilize the necessary resources and to develop planning and analytical approaches that will help channel more resources to education and increase the pay-off from their use.

The focus of this study is not the nationwide learning system, but its nonformal components. The upsurge of interest in nonformal approaches to learning seems to be the wedge that promises an opening to a wider view of education that extends beyond the traditional structures and functions of the school system. Experiences with nonformal programs are beginning to demonstrate the limitations and even the irrelevance of planning and analytical approaches that have been applied to education in the past.

The aim of this effort is not to produce a definitive technique of economic analysis of nonformal education. It is rather to clarify some pertinent concepts and definitions and to indicate an approach to economic questions that will be helpful to planners and managers of education in solving operational problems. This approach needs to be further elaborated and adapted to specific situations and its utility tested by applying it to a number of educational planning and management problems.

CHAPTER

2

THE SOCIOECONOMIC CONTEXT OF NONFORMAL EDUCATION

Two important factors—the pressure on resources and the inadequacy of present educational structures—have combined to spur a growing interest in new avenues of education that go beyond the conventional formal system.

PRESSURE ON RESOURCES

The inexorable pressure on resources and the ever-growing, unsatisfied demand for education have made it imperative to seek new educational approaches. In the early 1960s governments of most countries in the three less-developed regions of the world—Asia, Africa, and Latin America—launched heroic efforts to make the primary level of education as close as possible to universal and to do this as rapidly as possible. Impressive progress has been made since then in expanding primary education: Between 1960 and 1968 total enrollment in these regions (excluding the People's Republic of China) increased by over 50 percent (see Table 1).

Yet large populations remain deprived of basic education opportunities. Estimates from UNESCO sources present a bleak picture: ". . . in 1968, only four out of ten primary school aged children in

TABLE 1

Primary Education Enrollment in Asia, Africa, and Latin America, 1960/61 and 1967/68

	Enrollment (in thousands)		Percentage of Primary Age-Group Enrolled	
	1960/61	1967/68	1960/61	1967/68
Asia*	87,236	132,567	50	55
Africa	18,931	29,322	34	40
Latin America	26,973	40,751	60	75

*Excludes People's Republic of China, People's Democratic Republic of Korea, and Democratic Republic of Vietnam.

Source: UNESCO Office of Statistics.

Africa were actually in classes. In the Arab States only half attended school. Forty-five percent of Asia's children and 25 percent in Latin America were similarly not enrolled."[1]

But the picture may be even bleaker than these estimates indicate, because the usual educational statistics hide the very high drop-out and repetition rates and the gross urban-rural and regional disparities in enrollment in most countries.[2]

A UNESCO study in Latin America in the 1960s indicates the extent of drop-out and repetition and the sharp urban-rural difference (see statistics for Colombia in Table 2). In Colombia, of every 1,000 children starting primary school in 1962, in urban areas 273 could be expected to complete five grades; in rural areas only 37 would do so.*

*An aggregate measure of "wastage" as a result of drop-out and repetition is the ratio of the total number of student years invested per successful graduate and the duration of the cycle. Mean value of this ratio is 2.00 in Africa, 1.90 in Latin America, and 1.31 in Asia; the ideal ratio is, of course, 1.00. (Source: UNESCO Office of Statistics.)

TABLE 2

Promotion, Repetition, and Drop-out Rates in Primary Schools Shown for Urban and Rural Areas in Colombia, 1965

Grade	Urban		Rural	
	Number (per 1000)	Percentage Repeating or Dropping Out	Number (per 1000)	Percentage Repeating or Dropping Out
1 Promotion	648	35	382	62
Repetition	202		299	
Drop-out	150		319	
2 Promotion	775	23	274	73
Repetition	171		256	
Drop-out	54		470	
3 Promotion	776	22	401	60
Repetition	148		165	
Drop-out	76		434	
4 Promotion	820	18	480	52
Repetition	114		115	
Drop-out	66		405	

Source: UNESCO, *Statistical Measurement of Educational Wastage, Drop-out, Repetition and School Retardation*, prepared for the International Conference on Education, 32d Session, Geneva, July 1-9, 1970 (Paris:ED/BIE/CONFINTED 32/Ref. 1, June 24, 1970), pp. D-11, 44-45.

The quantitative measures of wastage say nothing about the quality of the lessons taught. Many remain virtually illiterate even after officially completing the primary cycle. An experienced observer in Thailand asserts that the majority of those who complete the four-year primary cycle in that country lapse into illiteracy within three years of completion.[3] In a Latin American country, 54 percent of the students who had six years of primary education were below the normal fourth-grade achievement level in reading and writing abilities.[4]

While basic educational opportunities have remained unavailable to large segments of the population, the costs and budgets of education have been growing in absolute and relative terms. (See Table 3.) It is difficult to believe that this rate of increase in educational expenditure can be sustained indefinitely by the developing nations; a slowing-down is probably already under way. As Table 3 shows, the increase in educational budget in fiscal year 1967/68 is less than the mean annual increase for 1960-68 in all three regions. As Coombs put it, managers of educational systems will thus have smaller

TABLE 3

Percentage Increase of School Enrollment and Public Educational Expenditure, 1960-68 and 1967/68

	Average Annual Percentage Increase in Enrollment at All Levels, 1960-68	Average Annual Percentage Increase in Public Spending	
		1960-68	1967/68
Asia*	5.6	14.1	12.6
Africa	6.2	10.0	9.2
Latin America	6.2	11.3	10.8

*Excludes the People's Republic of China.

Source: UNESCO Office of Statistics, cited by the International Commission on the Development of Education, *Learning To Be* (Paris: UNESCO, 1972), Appendix Tables 4 and 14.

annual increments to work with and a smaller area of maneuver, because the increments of educational budgets are usually heavily committed in advance, especially with respect to rising salary bills.[5] There are, of course, other pressures on resources. The demand for secondary and higher levels of education along with the expansion of primary education, the labor-intensive production function of education, rising expectations regarding the "quality" of education—all of these contribute to an inexorable trend of ever-rising costs in education.

An additional exacerbating factor is the high rate of population growth. This rate is typically close to 3 percent per year in developing nations, compared with 1.4 percent in North America and 1.01 percent in Europe-USSR during 1960-68. In the less developed countries population growth alone requires a 2 to 3 percent increase in school facilities. In addition, the resultant demographic structure imposes additional resource constraints in the form of a high proportion of young dependents demanding educational and other services from a relatively small work force.[6]

INADEQUACY OF EXISTING EDUCATION

The second factor concerns the relevance of formal primary and secondary education to the needs of social and economic development as well as to the fulfillment of individual aspirations. As we have noted above, formal primary education in effect serves less than half the children and adolescents in developing countries and still smaller proportions in the rural areas. Even if it were possible to expand primary education to cover all children, it would be generally agreed that the organization, methodology, age-structure, and content of formal schools are such that they alone cannot realistically be expected to handle the educational task of equipping children and adolescents with the knowledge, understanding, and skills required for employment, household management, family responsibilities, and participation in the community—in other words, for living a satisfying, productive adult life.[7]

In fact, formal schools have served as a gigantic sorting machine, selecting a very small fraction of their clientele for entrance into

progressively higher levels of formal education and dumping the vast majority by the wayside. The content and method of primary and secondary schools bear heavy imprints of this basic orientation despite sporadic efforts to "ruralize" and "vocationalize" formal schools. In addition, the orientation of formal schools has served largely to build expectations, goals, and values related to life and occupations in the city or in the modern sector. The educational experience, even at the primary level, has little to do with life and living in the rural areas, even though the overwhelming majority of the people in the developing world live in rural areas.

Education conceived as limited in time (to "school age" children, for full-time attendance at fixed hours) and confined in space (to school buildings) has meant denying learning opportunities to many segments of population. Besides those who never go to school and those who drop out early, there are other large groups, including those who complete a relatively high level of education but are unequipped for the world of work or even for adult life, those who find their training ill-adapted to the economic opportunities, and those who are employed but need new knowledge and skills in order to keep up with technical progress. Existing formal schools are of little help to these groups, all of which need educational opportunities beyond the traditional formal courses for a specified age-range. The notion that one has to accumulate all his educational credit between the ages of 5 and 20 and that this would serve him for the rest of his life is beginning to be questioned.

A WIDER VIEW OF LEARNING: OUT-OF-SCHOOL EDUCATION

The realities of resource constraints and the inability of formal education to cope with the burgeoning and diverse kinds of demands on education have prompted a new interest in such ideas as recurrent education, life-long education, and nonformal education. It is coming to be recognized that education need not be equated with schooling and measured by years of exposure to schooling; that what is important is learning, regardless of where, when, and how it occurs; that very wide latitudes exist in methods, sources, locations, timing, and tools of learning. As the UNESCO commission noted, ". . . the school's importance in relation to other means of education . . . is not increasing, but diminishing."[8]

Obviously, many types of out-of-school educational activities that are now being "discovered" have been going on for a long time. Adult education in various forms, extension services, on-the-job training, apprenticeship, and youth organizations have as long a history and tradition as formal education itself in many countries. But it is only recently that these activities have begun to be viewed as important parts of the total learning system of a society and their significance as means of answering vital educational needs has been recognized.[9] Studies have been undertaken and others are under way to categorize and define different modes of learning and to examine their relative importance in order to place the out-of-school educational activities appropriately within the context of the total learning system.[10]

Definitions

For the purpose of the present exercise concerning economic aspects of nonformal education, we have adopted definitions found useful by the International Council for Educational Development in its studies of nonformal education for rural development.[11] Nonformal education is distinguished from formal and informal education and is defined broadly as "any organized educational activity outside the established formal system—whether operating separately or as an important feature for some broader activity—that is intended to serve identifiable learning clienteles and learning objectives." Formal education, on the other hand, is the hierarchically structured, full-time, chronologically graded system, running from primary school through the university, including a variety of full-time technical and professional training, and generally controlled by a central ministry of education. Informal education refers to the life-long process of acquiring incidental attitudes, values, skills, and knowledge from daily experience and the influences and resources of one's environment. Through informal education, a child masters the fundamentals of his mother tongue and acquires a substantial vocabulary before he goes to school. In traditional societies most of the occupational skills and social role functions are learned through informal education.

It should be stressed that the distinction between formal, nonformal, and informal education is made only for analytical purposes: to examine and analyze organized educational activities that fall outside the traditional jurisdiction of schools. It should not be interpreted as an endorsement of the separation of these modes of learning. In planning and managing educational programs the prime consideration obviously is how the intended objective of a program can be achieved most efficiently. It is immaterial whether the aim is achieved through formal or nonformal means or through some hybrid method.

Economic Questions

As an economic activity, defined as the process of using resources to produce something of value, nonformal education is not fundamentally different from formal education. The resources consumed (the time and skills of instructors and learners, physical space and structures, equipment and books) and the yields produced (the increased skills, knowledge, and understanding gained by successful learners) are similar in both modes of education. There are, however, important differences in the ways formal and nonformal education activities are usually organized and operated, and in the specific aims they serve. Thus, the conventional treatment of the economic aspects of formal education is not entirely useful when applied to the economics of nonformal education. The differences and their economic implications will be made clearer in the subsequent sections, but some initial points should be made. First, the management of nonformal activities is extremely dispersed. Since there is no single central agency, such as the ministry of education or the board of education, that controls and directs the activities within a country or a region, there is no single budget, source of revenue, norm of expenditure, or financial control arrangement. Second, many nonformal programs are not discrete, independent activities, but are parts of broader programs—for example, there might be an extension service within an agricultural project. The costs as well as the products of such an activity are inseparable from those of noneducational elements of the total project. The problems

of measurement are further compounded in this case. Finally, the clientele served, locations of learning, objectives pursued, duration of courses, methodology, and kinds of personnel are extremely varied in nonformal education. As a result, there is a great flexibility and diversity in the way the different types of resources are used—quite unlike the standardization of formal education. Physical facilities, equipment, and instructors are often borrowed, part-time, and multipurpose. There is scope for harnessing unconventional resources not used in formal education. Special problems arise in attempts to inventory, quantify, project, and plan the use of these resources. However, the treatment of the economic aspects of education so far has been pretty much limited to formal education.[12]

This is not to say that the logic and principles of analyzing and calculating costs, finances, and benefits of education that have been developed so far are totally inapplicable to nonformal education. But since the materials covered, problems treated, and the specific techniques used have been all in respect of formal education, the special features of nonformal education and the special problems of techniques and methods posed by nonformal education have not been taken into account in the intellectual efforts devoted so far to the subject.

To illustrate the point, the costing and financing models used normally in educational cost estimates, projections, and analyses depend on assumptions regarding the structure of educational operations derived from formal education. In the economist's jargon a particular "production function" of education is implied in which the combinations of different inputs—students' and instructors' time, physical facilities, materials, and textbooks—are assumed to be relatively stable. The production function is, of course, relatively stable in formal education as it exists today. (Note, for instance, the preponderance of teaching personnel cost in education budgets, the narrow variation in teacher-pupil ratios, and the duration of courses in multiples of a year and uniform for all learners.) The problem is that the existing relationships of different inputs are seen as constituting an optimal model. That the conventional input-combination can be drastically varied (by using, for instance, mass media techniques, self-instructional materials, skill modules, apprenticeship, self-supporting educational programs, or the Lancastrian method), thus affecting costs, finances, and outputs of education,

does not usually enter discussion of the subject.*

The economic questions about nonformal education have to be asked within a framework of accepted notions of what is to be achieved in education, because the dimensions of educational goals have definite economic implications. For example, there has to be general agreement on answers to the following six questions before the economic aspects of nonformal education in a country or region can be meaningfully examined:

1. How widely should educational opportunities be dispersed?
2. What would be the acceptable scope of the content, quality, and purposes of the educational programs?
3. How equitably should educational opportunities be made available, taking into account regional disparities, urban-rural differences, and socioeconomic stratification?
4. How should the burden of the costs of educational services be shared and distributed?
5. What patterns and flow of skills would be needed by a projected course of socioeconomic development and how would these be provided?

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*A parallel problem lies in the assumptions regarding the relation of education to economic growth. We, of course, accept the premise that education is related to socioeconomic development and that the availability and distribution of educational opportunities are measures of development. However, the relationship between skills and education, skills and capital, and between the three and economic productivity is postulated by many educational economists to be such that technical coefficients are sought to be derived as determinants of optimal educational quantums. This type of analysis—more prevalent in the 1960s but not dead by any means—lends support to the notion of fixed "production function," underrates the importance of nonformal education, and avoids consideration of important educational problems, such as the content of education, its distribution among groups and individuals, and its socioeconomic impact on them. The issue of the relation of education to economic growth is not within the scope of this paper. For a discussion of the question, see John Vaizey, "Increases in Outlays on Education and Their Socio-economic Causes and Consequences," in Manuela F. Leita, et al., eds., *The Economics of Educational Costing Inter-Country and Inter-Regional Comparisons*, vol. 1 (Lisbon: Centro de Economia e Financas, 1968).

6. What would be the time frame for achieving the accepted goals and how would the process be phased?

The answers to these questions, obviously, have to be found through the political and administrative decision-making process existing in each situation. In addition, the questions are not independent of each other; the answer to any one of the questions would affect the answers to the others. Moreover, all these questions predicate economic questions regarding the availability and constraints of resources and the costs involved in achieving the educational goals. We will be listing the other questions that have to be kept in view for examining the economic questions.

On the basis of stated educational and development objectives of a large number of developing nations—often in the form of five-year development plans and longer-term perspective plans—we suggest a set of answers to the questions posed above. These answers, we believe, broadly reflect those educational goals considered important and desirable by most developing nations, though these may not represent the feasible educational goals. In any case, for the purpose of this work our answers would in very general terms provide a context for examining the economic questions. Variations in these answers would not affect the logic of this work, whereas the absence of answers would create insurmountable logical problems, as shall be seen later. The suggested answers are as follows:

1. Basic educational opportunities, not necessarily in the form of full-time formal primary and secondary education, should become available to all children and adults.
2. These educational opportunities should satisfy what may be termed the "minimum essential learning needs" determined in each society and nation for all the citizens. This minimum package would include at least these elements: formation of positive attitudes considered important by the particular society, functional literacy and numeracy, a scientific outlook and an elementary understanding of the processes of nature, functional knowledge and skills for raising a family and operating a household, functional knowledge and skills for earning a living, functional knowledge and skills for civic participation.[13]

3. The educational opportunities should be distributed as equitably as possible. Educational programs should not aggravate existing regional, urban-rural, and socioeconomic disparities; rather, they should be so organized that existing educational inequities are reduced. It should be noted that such a policy cannot be given effect without some realignment of development goals and priorities, reversing the traditional concentration of development efforts and resources in the urban-modern milieu.
4. Along with equitable distribution of educational opportunities, the sharing of the burden of costs for education should also be as equitable as possible. The system of financing the educational services and the methods used for mobilizing educational resources should be watched closely for the real impact of the burdens on people in different economic strata. Public financing of education does not necessarily lead to equitable distribution of the burden of educational costs. Educational financing should not become a means for subsidizing the well-to-do by taxing the poor, as often happens in the case of publicly supported low-cost (to students) higher education.
5. The total learning system of a society, not just formal education, should provide the training and skill development opportunities needed to satisfy the requirements of trained manpower for social and economic development. A vision, as clear as possible, of the social and economic development goals to be achieved within a time horizon of 5 to 15 years can offer guides to the requirements of training and skill development and the growth of the learning system. Conventional manpower studies would be of some help in the short run. But in the long run, attention has to be given to employment policies, the structure of economic production, and the relationship of skills and specific training courses, so that optimal human-resource utilization is achieved and an adequate supply of skills is ensured through a wide variety of skill development and training opportunities.
6. A time frame of 10 to 15 years would be considered a reasonable period within which to achieve or to make substantial progress toward the educational goals. To take a longer time span would involve more speculation than planning.

National educational systems are also expected, explicitly or implicitly, to serve such functions as fostering a sense of nationhood, democratizing the political system, and promoting socioeconomic equity, and to be one mechanism for status and role ascription. To the extent that these functions are given priority and the educational system is chosen as an active instrumentality for these social functions the framework for educational policies and strategies would have to reflect these priorities.

The above premises provide the context, for the purpose of this exercise, within which the planning of new educational programs and improvement and modification of existing programs would take place and the questions about resources, costs, and benefits of education would be asked. The statements themselves are of no great import. But a similar set of premises, formulated with as much clarity as possible for each situation—a country, a region, or a learning clientele—is needed to serve as a set of "social parameters," the values of which would affect the characteristics and functions of the learning system and determine the focus and relevance of economic analyses. The economic questions about education cannot be properly explored in a social vacuum.

In subsequent chapters of this work we propose to examine the relevant economic questions about nonformal education, to provide tentative answers where available evidence warrants such answers, and to suggest further lines of inquiry.

NOTES

1. International Commission on the Development of Education, *Learning To Be: The World of Education Today and Tomorrow* (Paris: UNESCO, 1972), p. 54.

2. As pointed out in a recent ICED report, ". . . in a country with an overall primary school participation rate of, say 50 percent, the chances are that in some of the poorer rural areas as many as 90 percent or more of all young people (especially girls) are reaching maturity without knowing how to read or write." Philip H. Coombs, Roy C. Prosser, and Manzoor Ahmed, *New Paths to Learning for Rural Children and Youth,* prepared for UNICEF (New York: ICED, 1973), p. 29.

3. Nicholas Bennett, "The Need for Educational Transformation: From the Marginal to the Utopian," paper presented to the Advanced Training Seminar on Educational Planning and Management, The Asian Institute for Planning and Administration, New Delhi, November 20-December 2, 1972.

4. ICED field notes, Jamaica, 1971.

5. Philip H. Coombs, *The World Educational Crisis—A Systems Analysis* (New York: Oxford University Press, 1968), p. 52.

6. Population under 20 years of age constitutes 52 percent of the total in India, 53 percent in Brazil, and 57 percent in Colombia, compared with 38 percent in the United States, 33 percent in Japan, and 28 percent in Sweden. United Nations, Statistical Office, *Demographic Yearbook, 1970* (New York: United Nations, 1971).

7. In a recent report to UNICEF a concept of "minimum essential learning needs" was formulated as an attempt to answer the question, "What educational needs should be fulfilled by one means or another for all boys and girls before they assume the full responsibilities of adulthood?" An indicative minimum package of skills, knowledge, and attitudes includes positive attitudes toward the community, development, and learning; functional literacy and numeracy; a scientific outlook and elementary scientific knowledge; family and household skills; occupational skills and knowledge; and civic participation skills and knowledge. The report concludes that formal primary schools might, at best, be expected to answer the child's needs for literacy and growth of scientific outlook; the main burden of meeting the other educational needs must be borne by various combinations of nonformal and informal education. Coombs et al., *New Paths to Learning,* pp. 13-16.

8. International Commission on the Development of Education, *Learning To Be,* p. 83. We refrain from an analysis of the arguments of Ivan Illich, Everett Reimer, and others who advocate the abolition of the school as a social institution on the grounds that it is creating social polarizations and psychological impotence instead of educating and liberating. Schools have a vital role in society, though obviously they need to be, and will be, reformed and changed, and they need not be seen as holding the monopoly on education. There is also no reason why the alternatives suggested by Illich and Reimer could not be experimented with and adopted without totally abolishing schools. See Ivan Illich, *De-schooling Society* (New York:

Harper and Row, 1970); Everett Reimer, *School is Dead—Alternatives in Education* (New York: Doubleday, 1972).

9. A 1963 report on adult education in the United States complained that although about a quarter of the total adult population attended some form of adult education and $10 billion was being spent yearly on adult education (twice the amount spent on all institutions of higher learning), a survey in the *Saturday Review* characterizing the total educational enterprise in the United States in terms of attendance and resources made no mention of adult education (the survey was typical of most discussion about the education enterprise). Jack London et al., *Adult Education and Social Class* (Berkeley, Calif.: Survey Research Center, University of California, 1963).

10. See two reports by the International Council for Educational Development. *New Paths to Learning,* and the companion study by Philip H. Coombs and Manzoor Ahmed, *Attacking Rural Poverty—How Nonformal Education Can Help* (Baltimore, Md.: Johns Hopkins University Press, 1974). Also see International Commission on the Development of Education, *Learning To Be;* Cole S. Brembeck and Timothy J. Thompson, eds., *New Strategies for Educational Development* (Lexington, Mass.: Lexington Books, Heath, 1973); James R. Sheffield and Victor P. Diejomaoh, *Nonformal Education for African Development* (New York: Africa-America Institute, 1972).

11. Coombs et al., *New Paths to Learning,* pp. 10-12.

12. For a general review of the subject see a number of booklets in the Fundamentals of Educational Planning series of the International Institute for Educational Planning (IIEP), particularly John Vaizey and J. D. Chesswas, *The Costing of Educational Plans* (no. 6); Jacques Hallak, *The Analysis of Educational Costs and Expenditure* (no. 10); and Maureen M. Woodhall, *Cost-benefit Analysis in Educational Planning* (no. 13). Also see Philip H. Coombs and Jacques Hallak, *Managing Educational Costs* (New York: Oxford University Press, 1972). However, in a series of 27 case studies of educational cost analysis undertaken by IIEP only one (relating to vocational training by INACAP in Chile) could be categorized as nonformal. See IIEP, *Educational Cost Analysis in Action: Case Studies for Planners,* vols. 1-3 (Paris, 1972).

13. Coombs et al., *New Paths to Learning,* pp. 13-16.

CHAPTER

3

RESOURCES

Our main concern in this section is how the resource base for nonformal education can be stretched and unconventional resources can be generated. A very important way of stretching resources, of course, is to reduce the costs and make the existing resources more productive. This aspect is considered in the chapters on costs and benefits. For the moment we are interested in the possibilities of increasing the absolute amount of resources available for nonformal education in a country or a region. We assume that however much the efficiency of resources used in education can be increased, greater resources than those used at present will be needed for education in general, and for nonformal education in particular, given the socio-economic context outlined in Chapter 2. We will proceed, first, by categorizing and suggesting a broader concept of educational resources; then, by examining the issues of assessing present and potential resources in a particular situation; and, finally, by considering the factors influencing the mobilization of educational resources. As far as possible we will draw on empirical evidence at each step.

Resources used in education can be divided into three major categories: financial resources, physical resources, and time. Financial resources refers to all funds available to educational authorities to spend on services and goods needed for

educational operations. Physical resources are the buildings, grounds, equipment, furniture, books, paper, pencils, paperclips, and all other material things used in the educational process. Time as an educational resource refers to the human factors: the time consumed by instructors, supervisors, administrators, planners, school board members, parents, and, above all, learners in the educational process. Obviously, the three categories are not mutually exclusive. Money is not a real resource, but it can be used to purchase the two other kinds of resources. But not all educational resources are purchased with cash; nor are all even purchasable or amenable to the assignment of a money value, because some are not for sale in the market—for example, instructional time contributed voluntarily by someone with special expertise or experience, free use of a physical facility, high motivation of a learner. Moreover, monetary values, especially as expressed in educational budgets, seldom represent the true value or significance of real resources in the educational process. It is, therefore, useful for our purposes to have this threefold classification, even though the first category partially overlaps the others.

FINANCIAL RESOURCES

Financial resources can be further classified on the basis of the sources of funds. First, there are public funds: all funds that come from national, regional, and local government sources, allocated expressly for educational purposes. Second, are household funds: all funds derived from households and spent directly as educational expenses for tuition, room and board, transportation, books, and so on, for members of the household. This category excludes earmarked taxes or levies realized and used for education by governmental authorities, because taxation proceeds are public funds. The third category, private and voluntary contributions, is made up of funds contributed by philanthropic organizations, foundations, trusts, religious organizations, business firms, and individual citizens for the financing of educational programs or institutions. The last category, funds derived from economic enterprises, includes funds spent by economic enterprises of all types on training and

skill development activities to meet their own manpower needs but excludes philanthropic contribution to education by business firms. Funds generated from the sale of services and goods produced by the educational programs themselves and from the investment of resources of educational institutions may also be included in this category.

Public Funds

Public funds constitute the most important financial resource for organized educational activities in all countries, developed and developing. It is difficult to estimate the proportion of public funds in total educational funds in the developing countries, because data about nonpublic funds are usually incomplete. The unmistakable trend, however, has been a rising proportion of public expenditures, compared with total educational expenditures, as postcolonial development-oriented governments have become committed to large-scale, planned educational expansion. The result, as pointed out earlier, has been a serious education budget squeeze in most developing countries.

The outlook for public educational revenues relatively speaking, is not rosy. Toward the late 1960s the sharply upward curves of educational revenues began to taper off. Annual increases of 10 to 15 percent in government educational budgets, when the economy had grown at 4 or 5 percent, could not have continued indefinitely. In the future, annual increases in public educational budgets cannot be expected to rise at a faster pace than general economic growth.[1]

Public education revenues can be supplemented by securing external aid and by borrowing. External assistance has been an important source of public funds for education, particularly in some African countries. But the relative importance of this source has been declining as national budgets for education have been rising in those countries. In any case, foreign economic assistance seemed to have reached a plateau by the beginning of the 1970s.[2]

Though external assistance in education can be expected to play a strategic role in moving national education toward innovative directions (along with creating confusion and encouraging misguided

steps in many cases), it cannot be expected to augment national educational revenues substantially. Borrowing is used extensively in the United States for financing capital installations for education—by selling guaranteed and tax-exempt bonds to financial institutions. This serves to make the funds available when they are needed and distributes the cost burden over a long span of time—presumably a fairer arrangement, because benefits from the investment are also derived over a long period of time. In the developing countries, however, this technique does not seem to have great prospect because of the undeveloped capital market and financial institutions, as well as the problems of confidence in and the stability of the economic and political structure. Some governments have borrowed from external agencies to finance educational projects, but this is really a variant of external assistance rather than an attempt to expand internal revenue sources.

It is necessary to ask what would happen if regional and local governments, rather than the central government, were required to assume a greater burden of raising educational funds. From the point of view of pure public finance efficiency and equity one would not view such a requirement with favor. Moreover, the trend in the developing nations is toward greater central control of national resources; insignificant taxation power is permitted at the lower levels of government. But to what extent can local governments raise funds for public education *in addition to* what comes from the central source? This question merits enquiry in specific country circumstances, including such aspects as the nature of the taxation bases, the capability of the local government machineries, and the equity implications that might arise.

We conclude this section with three general observations on public revenue for education. First, public revenues for education in the developing world as a whole will not continue to increase at the past rate; though public funds for education will probably keep pace with overall growth in economy and public revenue, the best chance for raising large-scale additional resources for education in most developing countries lies in mobilizing nongovernment financial resources and nonfinancial resources that are not ordinarily traded in the market. Second, though financial information for nonformal education is inadequate everywhere, it can be safely concluded that formal education has received the lion's share of total

public educational outlays, in both urban and rural areas of developing nations.[3] Finally, therefore, it follows that any new educational strategy with a prominent role for nonformal education will imply redeployment of existing public revenues for education, giving a larger share to nonformal education, in addition to whatever opportunities may arise to exploit unconventional and nongovernment resources for nonformal education. An important place for nonformal education in a new educational strategy presupposes changed priorities and goals in development efforts in favor of the rural population and the agricultural-rural sector of the economy. In such a climate larger proportions of public revenues would be expected to be channeled to nonformal education.

Household Funds

Households constitute an important source of direct revenue for education apart from taxes (which also, of course, come from households). The most obvious household payment is tuition. This item usually enters into the budget of institutions and is shown as a source of revenue. However, many other items of household contributions, usually not included in the budget statements, are often paid even when there is a token or nil tuition charge, and these can add up to a substantial amount for a household. Those items include clothing, books and other instructional materials, food and lodging expenses when the student resides away from home, and private tutoring expenses. Private tutoring of school students is widespread in many developing countries where students have to pass a public examination before receiving a primary or secondary certificate or for admission to higher education, and the payments sometimes far exceed the annual tuition charged by schools.

The total household payments for a school-going child are substantial even when primary education is nominally free, as it is in many developing countries. At the secondary and college levels, besides whatever public institutions exist there is generally a large private sector. While most public institutions recover a percentage (usually small) of their costs from fees (but do not usually cover individual costs such as food, lodging, and books), the private

institutions normally receive a larger proportion of their operating costs from student fees. Information on the contribution of household funds to education is very sketchy. Available evidence confirms the expectation that it is substantial and that it varies greatly from country to country and among different levels and types of formal education.[4]

In summary, the significant features of household contributions to educational revenues are as follows. First, even though information is inadequate about proportions and magnitudes of direct household payments for education, they constitute an important source of educational funds, second only to public funds in most developing countries. Second, education ranks high as an expenditure priority in household budgets. Even in cash-starved rural areas all over the developing world, families spend money sending children to primary and secondary schools. The payments for private tutoring confirm that households are willing to spend substantial amounts for educational services that they consider of some value. Third, on the basis of general observations of existing nonformal education opportunities in developing countries and the structure of incentives and employment policies that put a premium on formal education, it can be concluded that a very small share of household funds for education has gone into nonformal education. Private funds are naturally more responsive to direct economic incentives than public funds, which may be allocated and spent on the basis of noneconomic considerations. In situations where nonformal programs have been perceived as "profitable" in terms of potential employment, income, and other benefits, households have borne a part of the program costs.

Voluntary Funds

Information about individual and organizational cash contributions to support educational programs in developing countries is again sparse. The most important source in this category in most developing countries appears to be the religious organizations: the church, religious societies, temples, and so on. Significant examples are the Coptic schools in Ethiopia, the Quranic schools in West

Africa, and the Buddhist *Wat* schools in Southeast Asia. Each of the three institutions constitutes an important part of its national educational system and commands substantial financial, personnel, and physical resources. These institutions also share some common problems. They are extremely archaic in their educational content and methods and are quite unrelated to the public education systems that exist in each country, making it difficult for students to transfer from them to the public systems. Nonetheless, these institutions embody valuable educational resources that probably can be put to good use with the investment of some imagination and innovative efforts.

Another variant of religious contribution is the Christian missionary schools supported by Christian churches from the Western countries. In many countries these schools, in contrast to traditional religious institutions, have often been the pacesetters in building a modern formal school system, and they remain as the most prestigious part of the formal system.

Although organized religion has largely contributed either to the establishment of archaic religion-oriented education institutions or to the formal system, there have been sporadic efforts of individuals and groups from religious organizations to promote some of the most innovative nonformal educational programs. The multimedia educational program of Accion Cultural Popular (ACPO) in Colombia is a nationwide program started by a Catholic priest and devoted to educating *campesinos* of all ages throughout rural Colombia. ACPO uses its own radio network in conjunction with extensive printed materials (a mass weekly newspaper, a series of low-cost textbooks, and well-illustrated supplementary readers) for a variety of educational, informational, and promotional purposes including a primary education equivalency course through radio schools. Sarvodaya Shramadana is a community-development/self-help movement in Sri Lanka, inspired by Buddhist philosophy and aimed at uplifting the most deprived rural communities through collective educational and development activities. The program extends to about 380 villages. Diyagala Boy's Town, also in Sri Lanka, is a residential multipurpose and largely self-supporting program that combines basic general education with training in agricultural and practical skills for employment and self-employment. It enrolls about 280 youths with or without previous educational background in a

four-year program. The program was started in 1963 by the Brothers of Christian School Trust, a Catholic educational group. The Social Communication Center (SCC) in the Philippines is another priest-inspired program that specializes in creating multimedia educational "packages" for government agencies and other organizations on contract, particularly for use in rural areas. In addition to contract work, SCC has built its own audience served by three attractively produced periodicals with high educational and social content: *NOW*, a biweekly publication in English for school children (circulation 50,000); *Philippine Digest*, a monthly magazine in English aimed at more educated urban readers (circulation 25,000); and *Ang Tao*, a monthly journal in Tagalog for poorly educated rural families (circulation 122,000).

It should be noted that the cash contributions of religious organizations to both formal and nonformal education, though substantial, have not been the most significant element of their contribution, especially in the nonformal programs. It is rather the dedication and vision of the individuals who guided the programs that have made it possible for the programs to prosper.

One can find a few examples of some secular groups, organizations, and individuals not affiliated with a religious group who have succeeded in raising private resources to establish nonformal programs—two examples are the Philippine Rural Reconstruction Movement and Vidyapeeths in Mysore. The private efforts in establishing nonformal programs (including all the examples cited, except for the ACPO program, which is a nationwide operation) are small-scale and limited in educational scope, clientele, and geographical coverage. Taking the developing world as a whole, private financial contributions also have largely gone to formal education or to archaic religious education.

Funds from Economic Enterprises

Profit-making industrial, commercial, and service enterprises, besides the government civil service, are the prime users of skill produced by the educational system. In the industrial countries some of these enterprises make direct donations and grants to educational

institutions and some establish foundations and trusts to support education. In addition they spend huge amounts for the training and upgrading of their employees. The training and education budgets of some of the large corporations in the United States rival the budgets of large universities.[5]

The role and contribution of the industrial and commercial establishments have been given formal recognition and the educational efforts accepted as integral parts of the total educational system through industrial training legislation in many countries, such as the United Kingdom, France, and Japan. In many Latin American countries autonomous organizations, such as SENA in Colombia, INCE in Venezuela, INACAP in Chile, and SENAI and SENAC in Brazil, supported largely by levies on payrolls of business and industries, have been set up to operate skill-training programs.

The Employment Promotion Projects Corporation (EPPC) in Japan is a public corporation sponsored by the Ministry of Labor and financed heavily from accrued interest of the growing unemployment insurance fund. Among other activities, the EPPC maintains a vocational training division with administrative and supervisory responsibilities for Comprehensive Vocational Training Centres numbering about 70 in 1967, with more than 600 skill-training courses. A very large proportion of the total vocational training in Japan is carried out by industries. The 1960-70 long-term vocational training plan called for the training of 152,000 workers in public programs and 267,000 workers in private industry programs in the year 1970. The Japanese Employers' Federation, in order to supplement the activities of EPPC, has created the Japan Industrial and Vocational Training Association for the purpose of promoting and developing, within the industry, programs of apprenticeship, training in enterprise, foreman training, and management development.[6]

The sources of funds of INCE in Venezuela, for instance, are 1 percent payroll tax on all private industries and commercial establishments employing five or more workers (in Colombia the tax is 2 percent, in Brazil 1.5 percent), 0.5 percent of workers' bonuses and social benefits, and from the government 20 percent of the total of the above two contributions. At the present time, all employers in Venezuela employing 34 workers or more must accept apprentices between the ages of 14 and 18 at a rate of at least 3 percent of their

total work force.[7] In the developing countries in general, with the exception of the Latin American training organizations, direct financial support of educational institutions or operation of training programs by business enterprise is not a well-developed tradition. Yet more training within enterprises occurs than is generally realized. If all the business establishments in the developing countries depended entirely on what the formal school system turned out for their skilled manpower, very few would have survived or made any profit. Many industrial concerns have their own informal apprenticeship programs whereby they recruit raw hands who are promoted through the ranks as they acquire the needed skills through supervised work experience. The informal orientation, screening and promotion procedures, salary and incentive structures, and the supervision, placement, and personnel management system within each enterprise (if it is efficiently run) are also supposed to be designed for the improvement and optimal use of the employee's capabilities.

Contrary to the common belief, our observation in many developing countries suggests that only rarely has the absence of formal skill-training institutions prevented the establishment of a business or industry. It has always been possible to develop most of the middle-level skills, except for the highly specialized skills requiring advanced technical or professional training, by the enterprise itself through various improvised means. We see, therefore, that carpenters, electricians, masons, plumbers, tractor drivers, and crane operators help to build and maintain modern hotels, highways, airports, and radio stations; they operate trucks, railway locomotives, power stations, and irrigation projects in Kabul, Ouagadougou, and Gangtok. Most of these skilled workers have not come from formal vocational institutions.

The point to be emphasized here is that economic enterprises in developing countries do contribute to education when it becomes essential to ensure the needed supply of skills. This contribution is largely in the realm of nonformal education for the development of specific skills through various ad hoc pragmatic methods, as well as through more systematic training and apprenticeship programs. As with all other nongovernment financial sources, there is a dearth of information about the magnitude and impact of the financial contribution of economic establishments to education. The lack of

information is probably an important reason for the underrating of the significance and potentiality of this source.

PHYSICAL RESOURCES

Physical resources for education can be of three types: fixed capital installations, such as buildings and grounds; movable capital facilities, such as equipment, furniture, libraries and books; and consumable items, such as paper, pencil, wood, metal, chemicals, power and water supply.

Capital facilities use up a substantial share of formal education resources, particularly when the system is expanding rapidly. In France during the 1960s the cost of replacing and adding to school facilities approached 1 percent of GNP. In developing countries there is great variation, but where formal education is expanding rapidly, the capital budget is typically one-quarter to one-third of the total public education budget. The highest yearly capital expenditures as percentages of total public formal education budgets during 1960-65 for a group of 15 developing countries ranged from 7.2 percent in Argentina to 46 percent in Pakistan.[8]

Nonformal education programs, in contrast, offer opportunities for economies and use of new resources, particularly in respect to the fixed capital items. For many types of nonformal programs no permanent buildings or grounds are needed, except for a central administrative and support facility in large programs. For nonformal educational activities that are mobile in nature borrowed or rented facilities suffice for the duration of the activity in one location. For instance, any program that does not require the learners to assemble regularly in one location at fixed hours (examples are correspondence courses, radio lessons, programmed lessons, apprenticeship, on-the-job learning, and extension agent's work with farmers) does not require special buildings and sites reserved for the educational program. The homes, work places, and farms of the learners are the physical facilities for such activities. There is, however, no need to rule out all gatherings and collective learning; students of a radio lesson or a correspondence program can and, in fact, do get together with or without a "monitor" or "auxiliary teacher," but communities can

provide unused physical facilities for these purposes. Nonformal programs that require the learners to get together for relatively prolonged periods in an organized instructional situation can also make use of borrowed facilities that are otherwise unused or of rented facilities. This becomes possible because of the inherent flexibility in the pedagogical approach of these programs. Thus, a program of upgrading working artisans and journeymen in northern Nigeria uses the facilities of nearby technical institutes, primary schools, and government workshops.[9] Similarly, the Mobile Trade Training Schools in Thailand, designed to teach nonagricultural skills to out-of-school youths, use a temple yard, an abandoned building, or a temporary wooden structure made available free or for a rent by the community in which the school is located for a year or two before moving to another community.[10] An upper primary- and secondary-school equivalence program in Thailand uses regular school buildings in the evening, when the buildings are unused.[11] In all three cases somewhat similar formal programs are using expensive physical facilities.

The opportunities for economization and for the utilization of otherwise unused resources are more limited in the case of movable capital items but are far from nonexistent. When borrowed buildings are used by nonformal programs, the furniture and sometimes the tools and equipment are also available for use. The northern Nigerian Vocational Improvement Centres mentioned above make use of some of the equipment in the government workshops and the technical institutes. When industrial facilities are used for apprenticeship and on-the-job training, equipment is provided by the industries concerned. However, the relatively high depreciation from additional use of equipment, particularly in industrial training, makes it difficult to rely entirely on borrowed tools and equipment.

In a number of nonformal programs, some of the furniture, tools, and equipment are produced by the learners themselves in the course of their training. Workbenches, tables, blacksmith's tools, and simple farming implements are made by the learners in many programs—for example, in Diyagala Boy's Town in Sri Lanka, Rural Artisan Training Centres in Senegal, and Mobile Trade Training Schools in Thailand.

In respect to consumable items, nonformal education does not appear to have any special advantage over formal courses, and the

opportunity for exploiting unused or new resources seems limited. Skill training of different types requires various consumable items in order to offer practical instruction, experience, and a needed level of mastery to learners. In fact, sometimes in accelerated skill-training courses larger amounts of consumable materials are needed than in regular courses. In the MTTS program about one-third of the current budget goes to consumable materials, a far higher proportion than in formal skill courses. It may be argued, however, that in many nonformal situations—in industrial apprenticeship, on-the-job training, or when a learner produces goods for sale or use in the program—the consumable items are not wasted, as often happens in formal courses, but are used to add to the resources of the program.

TIME

Time of learners, instructional personnel, and support personnel (including planners, administrators, and janitors, as well as parents) is by far the most valuable and most expensive of all educational resources. Most of the instructional- and support-personnel time is purchasable. In fact, as we have noted, these items take a hefty bite in the educational budgets everywhere—approaching or surpassing 90 percent in some primary and secondary school systems in the developing countries. But even in formal education, not all personnel time is purchased or purchasable. Examples are the time of school board members, members of parent-teacher associations, parents helping children in homework, community members serving as resource persons in the classroom or helping organize co-curricular activities. None of these items is shown in the budget or usually included in resource estimates.

Even more important, in terms of quantity and educational significance, is the learners' time. As Benson stated, in the context of the United States, "though it has little market value in our country, the *time* of the elementary student is the scarcest resource in the school. Other resources may be increased in quantity, but the total hours that any child can effectively devote to learning has finite limit."[12] What is true of elementary students is not less true for

students in other levels and types of education. But students' time is not assigned any economic value in educational budgets and, therefore, is often unrecognized as an important factor in planning the use of educational resources. In calculations of the costs of education, however, the opportunity cost of student's time, determined on the basis of income foregone by students while at school, is often included. We shall return to the significance of the opportunity costs of student's time in Chapter 4; the point to be noted here is that learners' time is a scarce resource, the use and allocation of which have important consequences.

Nonformal education programs offer, at least potentially, the opportunity for mobilizing the time of learners, instructors, and others, which would otherwise remain unavailable for educational use. To the extent that nonformal programs unshackle themselves from the rigidities of full-time, certified, professionally accredited instructional and administrative personnel and become pragmatic about the use of all kinds of "auxiliaries," "resource persons," "specialists," and "volunteers," wherever and whenever they can contribute to the learning process, the total personnel time available for education is augmented—sometimes at little or no financial cost. Many examples can be found where nonformal programs have drawn extensively on the community population to supplement instructional personnel or even to bear the main burden of instruction. Agricultural extension services often use volunteers from the local community as assistants and links between the extension service and the local population. The national extension service of South Korea, for instance, includes more than 100,000 volunteer farm leaders who assist about 6,000 full-time extension agents and support staff in providing service to more than 2 million farmers. Without the volunteers, a much larger number of full-time agents would be needed to provide the same services.[13]

In the Jombang district of East Java in Indonesia, an innovative district head has found it possible to use the personnel of most of the important government agencies in the district in a wide-ranging youth education program. The program serves youth through practical activities in agriculture, rice processing, cottage industry, rural manufacturing and repair, and so on. The government personnel involved are those from local schools, cooperatives, Boy Scouts, field agents of national ministries, and a teacher-training institute.[14]

In programs involving mass media, volunteer "monitors" are frequently used to organize and provide reinforcement to the audience and to provide feedback to program originators. For example, the nationwide radio network of ACPO in Colombia offers literacy, primary-school equivalence, and fundamental education courses to *campesinos* through 22,000 listing groups guided by an equal number of volunteer "auxiliaries."[15]

Not all nonformal programs take advantage of the potentialities that exist. The MTTS in Thailand operated by the Ministry of Education insist on using only fully certified vocational teachers for the short-duration, part-time skill-training courses, offering the teachers special allowances to lure them away from Bangkok to the "hardship" area, even though experienced blacksmiths, electricians, welders, and carpenters from local communities could be used for teaching the skills at much lower costs. Barbering is the only exception, because there is no vocational teaching certification in this trade.[16]

The flexible use of learners' time permitted by nonformal programs also offers possibilities of economizing. These results are obtainable in various ways: by accelerated courses, thus cutting the total duration of courses normally required in a formal course; by using the leisure time of learners in part-time, evening, weekend, and vacation courses and self-instruction methods; through on-the-job training and apprenticeship when learners produce goods and services while learning; through altering the phasing and sequence of syllabi and courses existing in formal programs (such as in sandwich courses, in the use of skill modules, and in some adult literacy courses) which may cause the duration of the courses to be cut or more learning to be achieved.

A number of nonformal programs can be cited in which one or more of the above features has resulted in the economy of learners' time. The upper elementary- and secondary-equivalence course in Thailand mentioned earlier has cut by half the actual student hours needed to complete the courses, compared with the time needed in the regular schools. One may wonder whether the courses are truly equivalent to the formal courses. Learning achievements are hard to measure in both instances and even harder to compare, and there are many questions about the relevance and utility of both programs in Thailand's present socioeconomic context, but the Ministry

of Education and the government have accepted them as equivalent for the purpose of certification and employment, and the general public seems to have no qualms about their acceptance, if the popularity of the equivalence courses is any indication.[17]

While the accelerated courses free learners' time for other educational or noneducational uses, the part-time and spare-time courses and the apprenticeship, on-the-job-training, and (partially or fully) self-supporting programs presumably reduce the opportunity cost of learners' time spent in education. Alteration in phasing and sequence of courses can achieve either or both ends, depending on the courses and the nature of the alteration.

The taxonomy above suggests three conclusions. First, educational resources need to be viewed much more broadly than the revenues shown in the budget or even the totality of all financial resources. Without such a view, a rational effort to assess and mobilize educational resources cannot be carried on. Second, many resources, particularly the time of learners and of the voluntary and unpaid instructional and support personnel, are not traded in the market, but the manner of their use and allocation can make crucial differences in educational outcomes. Finally, the inherent flexibility of nonformal education offers the opportunity for mobilizing new educational resources and improving the use and allocation of existing resources. Whether these opportunities are actually seized is another question.

ASSESSING RESOURCES

An assessment of the educational resources that are in use and those that exist for potential use is, of course, necessary for the purposes of a rational allocation and deployment of resources and for the probable generation of new resources. Ideally, this would be a continuous process, in the form of maintaining a sort of running inventory of educational resources. But this exercise becomes specially important when a major overhaul or expansion of the educational system is planned—for instance, when a new educational strategy involving a large role for nonformal education is anticipated.

Any large-scale nonformal education effort cannot be simply added like a frosting on top of the "cake" of formal education; the whole structure of education would be ultimately affected by an appropriately conceived nonformal program. Therefore, it becomes necessary to make resource assessment a fairly comprehensive exercise, even when the objective is to launch a nonformal program. Only a total view of resources can provide the perspective for the proper assessment of resources for specific projects or a smaller geographical area. In other words, assessment can be at least at two levels: on an aggregate level, in terms of the educational system and geography, which would provide the overall magnitudes and dimensions of resources, and on a specific project or area level, in which case the relevant elements in the particular situation need to be looked at. The details of the picture and the degree of sophistication and precision in assessment would depend on the information that is available or that can be relatively easily generated and on the nature and scope of educational actions planned; more details and breakdowns would normally be expected in assessment efforts for a specific project or a small geographical area.

As indicated above, educational resource assessment is basically a process of inventory with very uneven accuracy and precision, given the broad definition of resources that we have adopted. Some resources, such as public revenues, can be fairly accurately quantified; for others only the order of magnitude can be indicated. Some other types can only be listed and a qualitative rating given in terms of their actual or potential usefulness for educational programs.

A problem area in resource assessment is the question of actual and potential resources. Resources actually being used in educational efforts at a particular time can be measured, counted, or listed once the boundaries and definitions of educational activities are established. But this is by no means a simple task, as soon as we venture beyond the domain of formal education. The only way to resolve the problem in a specific situation is to decide on as broad a definition as possible and include all purposefully organized activities with educational consequences. The criteria would be whether the activity is organized for an educational purpose and whether it is susceptible to the process of planning and management. Thus, all activities categorized in our definition as formal or nonformal would be included, but informal educational influences would be excluded.

The problem becomes more complicated when the potential resources are considered. The educational potentiality of a resource is a function of the efforts that can be made to mobilize the particular type of resource and the possibility that modification and change in the pedagogical approach would facilitate or even permit the use of the resource. We will return later in this chapter to the factors affecting the mobilization of resources. For the moment it is important to note that the potentiality of a particular item of resource can be determined only in the context of a well-defined educational strategy with reasonably clear notions of educational approaches to be followed. Also needed is sufficient commitment to the educational strategy on the part of the national authorities and the organizers of education, so that the effort to mobilize the needed resources called for by the educational strategy is made.

We turn now to some specifics of the aggregate assessment of educational resources. It would be somewhat repetitive to discuss separately each of the categories and subcategories of resources enumerated earlier. Instead, we will discuss the assessment question as it relates to the major sources from which educational resources are likely to or can be derived: public revenue, household and private contributions, economic enterprises, government service agencies, mass media facilities, and the indigenous processes of training and skill formation.

Public Revenue

The assessment problem is relatively simple in the case of public revenue. Quantitative data, often with geographical and other kinds of breakdowns, are available. The aggregates can be calculated easily from available statistics. These data are routinely presented in discussions of the economic aspects of education. Therefore, we need not say more about them except to repeat two important cautions. First, since lower levels of government often receive transfer payments from levels above them, one should be alert to the danger of multiple counting of the same funds. Second, government educational data often show only the ministry of education allocations as the total public allocation for education, and exclude

ɔcations of other ministries, such as agriculture, health, labor, ɔlic works, and national defense, which also spend large sums on ıcation in their respective fields; there is no justification for :luding those funds from the aggregate of public allocation. Determining the potential public revenue for education is ba- ılly a matter of projecting and forecasting what the different :ls of government are likely to spend on education in the future. like some other types of resources, public funds have clear alter- ive uses and the choice among competing demands is always dif- ılt. The most important factors affecting the future allocation of ɔlic funds to education are the general state of the economy and ɔrospects and the measure of public support and commitment education. The usual method used for projecting volumes of ıre public funds is to study past relationships between educa- ıal funds, GNP, and public revenue and to watch for trends in political climate and in the development plans.

Private Contributions

ɔata about private and household contributions are not easily lable, and it is therefore difficult to calculate or even to estimate magnitude of these contributions. As we have noted, there are ıy hidden private costs to households and individuals about :h no information is usually collected. It would be a large and :nsive undertaking to collect nationwide data on household and ıte contributions to education. Yet is is important to have a ure of what these contributions are in order to form a judgment ıt the resources that are devoted to education, the ways the len of cost is shared, the ways the burden could be redistributed, :cessary, and expectations for more or less resources from :ehold and private sources. Fortunately, this picture can be ɣn manageably with a relatively inexpensive sample survey of :ing and potential educational clientele. A survey of a carefully :ted sample—representing the clientele in all the different edu- ɔnal activities and allowing for geographical, socioeconomic, ɔther possible group variations—can provide reasonable esti- :s of the private expenses actually incurred and the aggregate of contributions.

As usual, it is more difficult to estimate the potential private contributions. Those who are already in educational programs may be questioned in the sample survey on the conditions and circumstances under which they would be willing to contribute more. When it is planned to bring new clientele into an educational program, a survey of a sample of the potential clientele groups to ascertain their capacity and willingness to pay will provide useful information. (Analysis of recent historical trends can also be of some help.)

Regarding other private contributions—from church groups, foundations, and so on—enquiries can be made directly to the appropriate organizations, because their number is not likely to be large in any developing country. It is more difficult to assess individual donations; the most feasible method would be to check with a sample of educational institutions and programs about their own revenues from this source and to project the total from this information.

Economic Enterprises

Economic enterprises of all types are already large contributors and can potentially make even larger contributions, depending on the skill-development policies and programs of a country. In countries where some form of industrial-training act or apprenticeship act is in force or some progress has been made in manpower planning, data are likely to be available on the educational activities of industrial and commercial concerns in the modern sector. Of course, for many on-the-job training programs and informal apprenticeship arrangements that do not fall under the provisions of the training acts data are usually nonexistent.

In most countries the departments of industry, commerce, labor, public works, and so on have information about the numbers and types of industrial and commercial concerns; some may have this information broken down by the size of capital outlay, the production capacity, and the number of employees. These data would be invaluable in projecting possible contributions of the economic enterprises in a planned skill-training program heavily involving the economic enterprises. If this information does not exist, or if it

excludes many enterprises (or if the data about educational activities mentioned in the previous paragraph do not exist), again, a limited sampling of economic enterprises may be in order. A census of economic establishments is not recommended, simply because it would not be considered feasible unless the government had other compelling reasons to initiate such a census. A survey of a representative group of enterprises, concerning their characteristics and educational roles and supplemented by available information from government regulatory agencies, chambers of commerce and industries, and so forth could provide a reasonable picture of their actual and potential educational contribution, but such an exercise would be worthwhile only if the planned educational program anticipates a major role for the economic establishments.

Some nonformal programs can engage in economic activities to recover at least a part of their costs. Many residential training programs in agricultural skills operate commercially profitable farms. Other skill-training programs sell their services or products. Some youth programs engage in public construction projects. Because of their operational flexibility and emphasis on practical experience, nonformal programs are particularly amenable to combining earning and learning. Self-financing as a cost-saving device (discussed in Chapter 4) obviously can also be viewed as a possible means of generating additional educational resources.

Government Service Agencies

In most developing countries the development and welfare-oriented, postcolonial governments have made major efforts to extend various public and welfare services throughout the country. Whatever the results in terms of net increase in welfare and development, we see today that public servants of government agencies of public health, agriculture, community development, cooperatives, forestry, fishery, public works, and so on are posted in all parts of a country. These public service agencies and their personnel, if they are at all effective, are playing educational roles. They can have even greater educational impact and be important educational assets, if the educational roles and potentialities of these agencies

and personnel are recognized and understood by themselves, by their superiors, and by educational planners and policy makers. As the Jombang experiment in Indonesia (cited earlier) and efforts in other countries illustrate, a policy of introducing nonformal educational programs on a large scale in rural areas can provide an administrative means and structure for government service agencies to make valuable contribution to education.

It follows, therefore, that information about the spread, personnel structure, facilities, budgets, and performance of the public-service agencies that have a potential for contributing to the learning process has to be collected, and the capacity of these agencies to contribute to education has to be evaluated.

Mass Media Facilities

All countries have many mass media facilities—printing presses, newspapers, motion picture theaters, radio stations, and folk theater groups, for example. All these media have potentially important educational uses in organized educational programs, besides whatever incidental educational influences they are exerting.

Almost every country, to take one example, has one or more radio broadcasting stations. Many countries, however, do not use their radio networks for any systematic educational program, even though a small number of countries are successfully using the radio for educational purposes. Since a major effort in introducing nonformal programs cannot avoid using all the media resources available, it is essential to take an inventory of the media facilities that exist in a country or a region, to examine the educational roles they are playing, and to assess their future educational potentialities in the light of planned or anticipated educational actions.

Indigenous Educational Processes

It needs no scholarly research to see that, in the rural areas of developing nations and in the subsistence sector of the economy, a

transfer of skills, knowledge, and attitudes takes place from one generation to another, often following a fairly organized pattern and sequence, resembling in essence the "modern" educational system. The indigenous process of training and skill development, which includes preparation for occupational, social, civic, and family roles, is, in the rural context, very often more relevant, practical, and comprehensive than what the modern system offers through its primary and secondary schools.

The indigenous system has all the essential elements needed in an educational program: the learners, the instructors (probably the father or any other qualified member of the community), and the physical facilities (the home, farm, or artisan's workshop). Obviously, it is a system conceived for a self-sufficient, rural subsistence economy and is in trouble today because the family and the village are no longer self-sufficient economic units. The subsistence-level operation either does not provide subsistence or does not satisfy rising expectations.

Can the indigenous process of education be modified and improved with outside intervention at appropriate steps and transformed into a relevant kind of rural education? The answer is not clear; educators have usually neglected the indigenous system and have rarely considered its usefulness and potential role in building a rural educational structure. Very little research and experimental efforts have been devoted to the problem. In the current climate of receptivity to alternative ideas in education it would be only proper to consider the promises that the indigenous process holds.[18]

Although in assessing actual and potential educational resources as a step in planning educational change it may not be feasible to launch a research project on the importance of indigenous educational processes, it should be possible to collect available information. And it would be essential, especially when a rural program is considered, to remain sensitive and open-minded about the possibility of building upon the indigenous base.

FACTORS AFFECTING RESOURCE MOBILIZATION

The resources available for education depend on the conditions that exist to facilitate the mobilization and generation of resources

and the amount of effort that is made to mobilize the resources. Some factors that influence the availability of resources relate to the educational operations; others, such as those noted below, go beyond the realm of education and cover the general social, political, and economic disposition of the country.

A country with a vision of its future, a sense of mission that is shared by the people, a sincere and dedicated political leadership, and a national commitment to a strategy and plan for development is obviously in a strong position to launch large-scale educational reforms and to mobilize the resources for this purpose. Such an ideal climate exists nowhere, but to the extent a country approximates this condition, it is likely to succeed in mobilizing greater resources for education. Note the examples of countries with strong, dedicated leadership and political organizations with mass participation: Cuba, Tanzania, China, and the more developed socialist countries.

Complementary development efforts in noneducational spheres reflect development goals and priorities of the country and in turn create demand for new knowledge and skills, provide all kinds of personnel and facilities for nonformal education, and lend purpose and relevance to the specific educational activities. The limitations on what can be achieved by educational programs in a depressed area where nothing else is going on by way of development efforts are evident.

The rigid structure of formal education allows little opportunities for use of unconventional resources. In contrast, the expansion of nonformal education can spur greater contribution of all kinds of nonmarket resources. Appropriate legislative provisions—enabling and regulatory, such as industrial training acts or payroll levies—are also needed for certain programs.

So long as existing employment policies and incentive structures put a premium on formal credentials and diplomas, nonformal efforts will remain handicapped. Similarly, so long as development allocations and efforts are concentrated in the urban areas at the cost of providing essential public services and improving the productivity and employment position in the rural areas, plans for rural nonformal education are unlikely to generate much enthusiasm. In fact, the potential clienteles would be generally correct in perceiving the nonformal programs as being neither profitable nor highly

relevant, since the economic advantages—or at least a gambling chance of such advantages—would still lie with formal education.

By and large, the nonmarket resources, both human and physical, for nonformal education have to be generated at local and regional levels. Only by planning and operating educational activities suitable for local conditions and relevant to local development goals can the support and contributions of local people be harnessed. Local resources, therefore, can become available only to the extent that the needed planning, administrative, and organizational capabilities exist or can be developed in both the local government structures and in community institutions.

Finally, resources are not likely to be generously available if they are squandered. People of a community, as much as the minister of finance, support programs that use resources most productively, and withhold support and donations from programs that are operated and managed with gross ineptitude.

NOTES

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3. Philip H. Coombs and Manzoor Ahmed, *Attacking Rural Poverty—How Nonformal Education Can Help* (Baltimore, Md.: Johns Hopkins University Press, 1974), p. 22.

4. See, for instance, Nicholas Bennett et al., "Problems of Financing the Thai Educational System During the 1960s and 1970s," mimeographed (Bangkok: Educational Planning Division, Ministry of Education, 1972).

5. See H. F. Clark and H. S. Sloan, *Classrooms in the Factories* (Rutherford, N.J.: Institute of Research, Fairleigh Dickinson University, 1958); also Fritz Machlup, *The Production and Distribution of Knowledge in the United States* (Princeton, N.J.: Princeton University Press, 1962).

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7. Leon Weintraub, *International Manpower Development* (New York: Praeger, 1969), pp. 27-33.

8. UNESCO, *Statistical Yearbook, 1967* (Paris: 1967), Table 2-16.

9. Clifford Gilpin and Sven Grabe, *Programs for Small Industry Entrepreneurs and Journeymen in Northern Nigeria* (case study no. 7) (Essex, Conn.: ICED, April 1972), p. 38.

10. Manzoor Ahmed, *Mobile Trade Training Schools in Thailand* (case study no. 6) (Essex, Conn.: ICED, 1972), p. 21.

11. Adult Education Division, Thailand Ministry of Education, "Thailand: An Innovative Approach to Functional Literacy," in Manzoor Ahmed and Philip H. Coombs, eds., *Education for Rural Development: Case Studies for Planners* (New York: Praeger Publishers, 1975), p. 325.

12. Charles S. Benson, "The Economic Context," in The National Society for the Study of Education, *The Elementary School in the United States* (Chicago: 1973), pp. 213-14.

13. Manzoor Ahmed, *Farmer Education Program of the Office of Rural Development in the Republic of Korea* (case study no. 4) (Essex, Conn.: ICED, 1972), p. 16.

14. S. J. Woodhouse and A. H. Lubis, "Indonesia: A Comprehensive Locally Initiated Youth Program," in Ahmed and Coombs, *Education for Rural Development,* op. cit., pp. 111-130.

15. Stephan F. Brumberg, *Accion Cultural Popular: Mass Media in the Service of Colombian Rural Development* (case study no. 1) (Essex, Conn.: ICED, 1972), p. 65.

16. Ahmed, *Mobile Trade Training Schools in Thailand,* p. 52.

17. Adult Education Division, Thailand Ministry of Education, "Thailand: An Innovative Approach to Functional Literacy," op. cit., pp. 321-29.

18. See a brief discussion in Philip H. Coombs, Roy C. Prosser, and Manzoor Ahmed, *New Paths to Learning for Rural Children and Youth* (New York: ICED, 1973), pp. 41-43. As the report notes, an ILO pilot rural employment project in southwest Nigeria is

attempting to build its training program on Archibald Callaway's pioneering research on indigenous apprenticeship in Nigeria. Other ILO rural training projects in, for instance, the Central African Republic, Senegal, and Upper Volta, and many cottage industry projects around the world also constitute attempts at building on specific indigenous training processes. However, no example could be found in ICED's search of any serious attempts at modernizing the total process of educating children and adolescents, taking as a point of departure the indigenous educational tradition.

CHAPTER

4

COSTS

We will begin our discussion of the costs of nonformal education with a few general points about the concept of educational costs and the classification of costs in some operational categories. We will then discuss the determinants of costs: factors internal to the educational process as well as those essentially external to education. Finally, on the basis of available evidence we will examine the behavior of costs in nonformal education.

CONCEPTS AND CATEGORIES

Meaning of Cost. Cost in the economic sense is not as straightforward a term as one might expect. Two questions that have significance for education arise as soon as cost is mentioned: first, cost to whom, and second, does "cost" refer to money cost or to "real" resource cost? There are no clear answers to these questions, as any discussion of the concept of costs will show.[1]

There can be private cost, public cost, and social cost for the same educational service. Costs can also be looked at from the point of view of an economic transactor—that is, the owner of a factor of production, a producer, or a consumer. Cost for the same educational

service to any of these parties would usually be quite different.

Money Costs and Real Costs. Costs are usually expressed in terms of money, but money is not a very stable measuring rod. The value of money changes over time, so costs can be measured either in current prices or in constant prices. (We need not further complicate the issue by examining the question of marginal utility of money to different people, which can pose another set of cost-measurement problems.) Not all educational resources are traded in the market, however. To assign a price to them can therefore be done only somesomewhat arbitrarily, if at all. In any case, a distinction between money cost and cost in terms of real resources used can and must be made to get a perspective on the real costs of education.

Opportunity Costs. Real cost, in principle, is equal to the "opportunity cost" of not achieving the best possible alternative economic benefit by using the same resources. Looking at costs in real resource terms, therefore, eliminates the issue of whether to include or exclude opportunity costs in cost measurement. Many economists impute a cash value to some items of opportunity costs, particularly the income assumed to be foregone by students while in an educational program, and include it in calculating the cost of a program. Others object to this procedure, because it is impractical as well as logically inconsistent. The practical problem concerns the calculation of the income foregone. Prevailing wage rates for young people cannot be used, because this would assume full employment and a labor market that is totally unresponsive to major shifts in labor supply due to the influx of the student population. But these problems can be overcome by using appropriate discount rates for wages. The other fundamental objection is that inclusion in cost of the income foregone by students assumes that education has a welfare effect of zero and that employment in an economic establishment is a superior form of economic activity to enrollment in an educational program. This position leads to the anomaly of rising educational costs and lower productivity measures when more students come into a program and no other cost factor changes. One would expect just the opposite result.[2]

Without attempting to settle the arguments, it can be said that the concept of opportunity costs helps to keep in view the real resource cost and is, therefore, of value to the authorities responsible for formulating social policy and allocating resources among

different social investments. Its appraisal also helps one to understand the real private cost burdens to individuals, households, and groups intended to be the beneficiaries of educational programs. As we have noted, very often a rural youth can attend an evening or spare-time educational activity but cannot afford to go to a full-time day school, even if the school is "free."

Capital, Recurrent, and Initial Development Costs. Capital costs refer to expenditures for durable educational inputs, particularly buildings, land, furniture, and equipment used for more than a single fiscal year. Recurrent costs are those that recur every year and are associated with items normally used up continuously or within the fiscal year: salaries, textbooks, materials, and supplies. They also include maintenance of capital facilities and debt servicing, if any.[3]

Although in principle all costs can be divided up into those two categories, and although the distinctions between the two are clear enough, it is sometimes useful to place certain items of costs under additional categories. Such an example is the "starting up" or initial development cost associated with a major experiment or innovation. This is a one-time cost involved in launching a new project that will, it is hoped, succeed and spread without a continuation of the high initial costs. Such research and development costs often become highly inflated by the use of international experts and the availability of external assistance. Of eleven nonformal education projects studied by ICED in different countries, eight had all of their initial development costs covered by external assistance. To include these costs in the capital and recurrent cost calculations for the initial years would have given a distorted picture of costs of these programs.[4]

DETERMINANTS OF COSTS

External Factors

A number of factors exogenous to the educational process itself affect costs of both formal and nonformal education.

If half the children of primary-school age in a country do not have any organized educational service available to them (a common situation in many developing countries), and if the population in the country is rising at a rate of between 2 and 3 percent per year, the country will need to increase its educational opportunities at the primary level about threefold to offer educational services to all its primary-age-group children within a decade.[5] Aspirations for democratization of the political process and commitment to greater social justice in the developing countries also require a broadening of educational opportunities. Costs of such expansion can be more than proportionally high if educational services are intended to be brought to the especially disadvantaged groups in society, to remote and inaccessible areas, and to economically depressed regions in the country.

The accelerating pace of economic development—expansion of the modern sector and the introduction of new technologies in the traditional sector and other efforts to improve its productivity—creates new educational demands. Regardless of whether the manpower-requirements approach of educational planning and the assumptions about the relationship of skill requirements and formal education are accepted, it is undeniable that new skills and knowledge will be needed for the development process to continue.[6] To the extent that nonformal educational approaches are adopted to satisfy these educational demands, the total educational outlay for nonformal education will go up.

The worldwide phenomenon of monetary inflation, which is particularly acute in many developing countries, is another factor affecting very substantially the financial cost of education over time, especially when the educational system is rapidly expanding. Generally, formal education is more susceptible than nonformal education to inflationary pressure, because a larger percentage of the formal education costs is likely to involve money transactions. By the same token, to the extent that nonformal programs can make use of nonmarket resources, they will be protected from the effects of inflation—but this situation would vary greatly for specific educational activities and locations.

Another influence on costs that is particularly relevant to nonformal education has to do with joint costs for educational and noneducational elements in development projects and the

complementarities involved. The complementarities arise from the use of the same personnel, facilities, equipment, and materials for educational, noneducational, and joint functions. Usually, this has the effect of reducing the total cost of the project, compared with what it would have cost if the educational and noneducational functions had been discreetly organized (assuming they could be separated at all). This arrangement, obviously, creates problems in measuring educational costs, but cost advantages from the multipurpose use of resources are often plainly evident or can be estimated.

Good examples of joint costs are to be found in the various area-development projects managed by relatively atonomous organizations, such as the Chillalo Agricultural Development Unit (CADU) in Ethiopia, the Program for Agricultural Credit and Co-operation in Afghanistan (PACCA) and the Lilongwe Land Development Programme in Malawi.[7] In these programs an overall agricultural- and rural-development effort has been launched in a limited area of a country through a coordinated approach of planning the improvement at the same time of several essential factors, such as the social institutions, the physical infrastructure, the provisions for physical inputs, the delivery of skills and technology, and the general health and nutritional conditions. Education and skill development are integral parts of the whole process and are beneficiaries of all the human and physical resources of the respective projects.

Internal Factors

The internal determinants of costs relate to the types and combinations of inputs that go to education. In broad terms the major educational inputs are the learners' time, instructors' time, physical facilities, and equipment and materials. The quality and quantity of these and their relative proportions depend on the educational approach followed. (This is where the analogy of a "production function" arises, suggesting the similarity of the educational process to an industrial production process.)

ICED's attempt to determine unit costs in six rural training programs and the principal variables influencing these costs is presented

in Table 4. The main variables, at least for these programs, were found to be type of facilities (whether permanent or borrowed, and investment cost per place); type of equipment (investment cost per trainee); residential requirement (whether the trainees are required to reside in institutional facilities for the purpose of the training); utilization of capacity (full or partial, with single or multiple shifts); type of staff (qualifications, full-time or part-time, domestic or foreign, staff salary levels); staff-trainee ratio; and duration of course.

On the top of the cost scale are Senegal's Rural Training Centres and the International Rice Research Institute's Rice Production Training programs. The main reasons for their high costs are their expensive permanent facilities and equipment; full-time, residential, and relatively long-duration courses; full-time, relatively highly paid professional staff including expatriate members; and the relatively low ratio of trainees to instructors. At the other end of the scale are Nigeria's Vocational Improvement Centres (VICs) and SENA's mobile rural training program in Colombia. Neither has permanent facilities (they use borrowed buildings during off-hours); their programs are nonresidential and part-time; their ratio of trainees to instructors is relatively high; and the total time in each course is low. The VICs have the added advantage of using mainly part-time staff. Kenya's Farmer Training Centres (FTCs) and Thailand's Mobile Trade Training Schools (MTTS) are in the middle range of the cost scale for different reasons. Despite various high-cost elements and the low utilization rate of FTCs, their short course duration keeps per trainee cost relatively low. MTTS costs are low because of the low capital costs and its double shifts per day.[8]

In a country's conventional educational system as a whole, over a period of years a relatively stable relationship among inputs can be observed. This relationship is an important determinant of educational costs and provides a basis for cost projections. Essentially, this relationship has produced the effect of continuously rising unit and total costs in formal education.

As indicated in our discussion of resources, however, nonformal education opens up various possibilities of different input combinations, and consequently different cost structures. Since no long-term experience of a nationwide effort to use nonformal education exists today, we cannot be definitive about the cost effects in public, social, or private cost terms of adopting a new national educational strategy with a prominent role for nonformal education.

TABLE 4

Comparison of Key Cost Determinants of Six Training Programs

	Senegal RTCs	IRRI RPT	Kenya FTCs	Thailand MTTS	Nigeria VICs	Colombia SENA/PPP-R
Facilities	P	P	P	B	B	B
Staff	FT	FT	FT	FT	PT	FT
Per Center	3 (3)[a]	(7)[a]	4	8	10	1
Cost	High	High	Medium	Medium	Low	Low
Course Features	R	R	R	NR	NR	NR
Duration	9 mos	6 mos	1-2 wks	5 mos (15 hrs/wk)	10 mos (10 hrs/wk)	40-120 hrs
Number of trainees per staff member	7	5	10	25	10	21
Cost per trainee per course[b] ($U.S.)	$648-828	$3,249[c]	$30	$130	$104	$20[d]
Opportunity cost to trainee or employer	High	High	Medium	Low	Low	Low

Note: P: Permanent; B: Borrowed; FT: Full-Time; PT: Part-Time; R: Residential; NR: Non-Residential.

[a]Numbers within parentheses are for international staff.

[b]Per trainee costs include amortization of capital, except for Nigerian VIC and SENA/PPP-R; only the operating costs are given for these two cases.

[c]Includes international travel costs for trainees.

[d]Unit cost for regular courses.

Source: ICED estimates from project data.

At least one country has, mainly on the basis of cost considerations, accorded a major role to nonformal education in its educational development proposals. The educational development strategy for Ethiopia, produced after an intensive year-long review of national education, stresses the need for a heavy reliance on nonformal education to supplement and follow up primary education and to make basic educational opportunities available to all youths and adults within the limits of projected resources for education. The proposals, formulated with the aim of moving from the present participation rate of under 17 percent of the age group in primary schools to some form of educational opportunity for almost all children by the year 2000, include a cutting of the present six-year primary stage to a minimum formation education course varying in duration for different learners, but lasting an average of four years, with entry age between seven and ten years; an accelerated basic formation course of about two years for those between the ages of 13 and 16 who would not attend the minimum formation course (simply because many will not have this opportunity till the year 2000); and extensive nonformal education programs as follow-up to the above courses and for adults offered through Community Development Centres and through "Community Practicums" organized in collaboration with primary and secondary schools and other institutions.

In contrast, reliance on a formal education strategy with linear expansion of the present system would result in participation in education of about 600,000 learners by the year 2000 but would provide no opportunity for postprimary education for a majority of these students. A combined formal-nonformal strategy would, on the other hand, provide for participation of over 800,000 people, including postprimary nonformal opportunities for all those who would not go to secondary education. The same level of educational expenditure is projected in both cases.[9]

BEHAVIOR OF EDUCATIONAL COSTS

What we can say about the behavior of educational costs is derived mainly from what has been observed in formal education.

Coombs and Hallak have summarized a set of generalizations drawn from a series of 27 case studies of educational cost analysis prepared in the International Institute for Educational Planning.[10] These, some of which have been alluded to earlier, are as follows:

1. Personnel costs dominate educational budgets. The labor-intensive nature of education combined with the organizational features of formal education create this effect. The following are three examples cited by the authors.
   - In the USSR nearly three-quarters of all state expenditures in primary and general secondary education in 1965 went for salaries and wages, about one-eighth for all other current costs, and one-sixth for capital costs including repairs.
   - In Ceylon the combined personnel costs for primary and secondary education in 1968 represented 94 percent of the current costs.
   - In Morocco an estimated 95 percent of total costs (including capital costs) for a sample of secondary schools in 1967-68 were current costs, and, of these, 98 percent went for salaries.
2. There is a trend of continuous rise in costs per student. The dominance of personnel costs appears to be the main culprit. As economic conditions improve and wages rise, the salaries of teachers also rise. As long as educational technology requires a heavy input of paid labor, unit costs will continue to increase.
3. The structure of educational costs, despite the trend of rising costs, is remarkably stable. The high share of personnel costs serves as a ballast and keeps the composition of the educational cost elements relatively unchanged, even though total and unit costs continue to rise. Blaug has shown that salary costs in British universities maintained the same percentage relation to total costs between 1952 and 1962.[11]
4. Costs are higher at higher levels of education. In formal education, unit costs rise with each successive level of education, regardless of whether it is general or technical and vocational education. The cost differentials between the primary level and the university level may be as much as 50 times in some developing countries. An illustration from Thailand is shown in Table 5.
5. The academic calendar of formal education imposes a cost burden. Typically, classes are held for five or six hours a day,

TABLE 5

Estimated Recurrent Expenditures per Student in Thailand, by Level and Type, 1964 (in Thai bahts)

	Total Recurrent Cost (1)	Personnel Cost (2)	(2) as a Percentage of (1)
Primary education	261	240	92
Secondary general	1,005	874	87
Technical and vocational	2,367	1,685	71
Teacher training	3,138	2,206	70
Higher education	9,423	5,437	58
Average (all levels)	383	314	82

Note: At the time of the case study the rate of exchange was $1 = 20.8 bahts.

Source: H. W. Reiff, "Thailand: The Use of Cost Analysis in Estimating the Total Cost of an Educational Plan and Testing Its Feasibility," in IIEP, *Educational Cost Analysis in Action: Case Studies for Planners*, vol. 1 (Paris: UNESCO, 1972), cited in Philip H. Coombs and Jacques Hallak, *Managing Educational Costs* (New York: Oxford University Press, 1972), p. 113.

during which time only a part of the total facilities—laboratories, libraries, playgrounds, gyms, or classrooms—are used. Long vacations, holidays, and weekends take up almost one-half of the calendar year. All of these add up in total costs. The more expensive the facilities, such as those in technical and higher education, the higher the cost of this wastage.

6. Economies of scale are available to a limited degree in formal education. It has been observed in many countries that consolidation of primary and secondary schools has resulted in a reduction in unit costs, while at the same time the variety and scope of the school programs and their quality have improved. The same phenomenon can be observed in respect to technical education and universities. There is, however, a limit to this: economies disappear when the overheads of administration, management, and

central services begin to be spread too thinly, and too large a concentration of people and activities adversely affects the social and psychological environment. A tradeoff point is reached where the cost advantages are more than offset by the deterioration in the quality of learning.

To what extent are these observations applicable to nonformal education? The answer is not clear or straightforward for two reasons. First, we do not have sufficient experience with large-scale systematic operations of nonformal programs in different countries. The kinds of patterns of nonformal programs that would provide the basis for cost generalizations have not developed, as they have in formal education. Second, by its nature nonformal education is extremely diverse in pedagogical approaches, organization, and objectives, so inferences about the general behavior of costs in nonformal education would be much more difficult to arrive at than in formal education.

In the following pages we will present evidence from studies of nonformal education by the International Council for Educational Development on three cost issues: cost-saving features of nonformal education, comparison of formal and nonformal program costs, and cost feasibility of expanding programs.

COST-SAVING FEATURES

Low Capital Costs

In many programs there is little or no capital cost involved specifically for the educational activity. Programs such as 4-H Clubs and their variations, rural farm forums, on-the-job occupational training of various kinds, youth and women's clubs, village self-help groups, and correspondence courses do not require special physical facilities at the field level.

Other programs can make use of existing physical facilities during off-hours. Examples include literacy courses in many countries, school equivalency programs in Thailand and Jamaica, Vocational

Improvement Centres in Nigeria, Mobile Trade Training Schools in Thailand, SENA's rural training program in Colombia, and the youth education program in Jombang, which uses community development and Pramuka training centers for the project.

Still others have physical facilities that are of low cost because they are adapted to local needs and conditions (built largely with local materials, labor, and techniques, and in some cases with contributions in cash and kind from the community or the learners). The Village Polytechnics in Kenya is an example in which the diversity in the facilities matches the diversity of the programs in the different centers. In the case of the rural Education Centres in Upper Volta some buildings have been donated by the European Development Fund at almost double the cost of other facilities built by the communities themselves. In Diyagala Boys' Town in Sri Lanka a large part of the facilities has been constructed by the learners. To a lesser extent the enrolled youths have helped in the construction of some of the Jamaican Youth Camps. The COPs (Centres a Orientation Pratique) in Mali have been constructed with community contributions.

Although expensive facilities are not needed at the field level in most nonformal programs, any program that reaches a large audience and expects to have a significant impact must be supported by backstopping facilities, although the per learner capital costs may not be high even in these cases. Examples of such well-developed central facilities include the Cooperative Education Centre and Wings in Tanzania, the ACPO headquarters facilities, the Mobral central facilities in Brazil, and Adult Education Institutes in Kenya and Tanzania.

To the extent that nonformal programs adopt various features of formal programs such as permanent, standardized physical facilities for regular, full-time classroom instruction, and full-time residential requirements for students, nonformal programs may also become capital intensive. Examples of nonformal programs with relatively expensive capital facilities are Jamaica's Youth Camps, Rural Education Centres in Mali, and the National Youth Service in Kenya.

Low Personnel Costs

All educational activities are labor intensive, and, as noted above, personnel costs constitute the largest item in most educational budgets. Moreover, since these costs are recurrent, any increase or saving in personnel costs has a permanent effect on the cost of the program.

Opportunities for savings in personnel costs arise from the use of part-time instructors for a proportionate or less than proportionate part-time wage, volunteers who serve as instructors or instructional help at no charge or a small charge, and local people with special experience or expertise who offer their services. The opportunities for cost savings have been used to varying degrees in many of the programs surveyed by ICED.

One way to reduce personnel costs in nonformal programs is by use of part-time staff, as in literacy programs in Thailand, Brazil, and most other countries, in the school equivalency program in Thailand, in some of the Village Polytechnics in Kenya, and in the Jombang project in Indonesia. Another method is to use volunteers as instructors or organizers in instruction, as in ACPO, 4-H-type activities, the extension program of South Korea's Office of Rural Development (ORD), Boy Scout and Girl Guide programs in many countries, YMCA and other religion-oriented organizations, and Sarvodaya in Sri Lanka. A third way is to use local resource persons, as in the Village Polytechnics of Kenya, literacy and family life education program in Thailand, literacy courses in Mali, Tanzania's cooperative education program, Cuba's schools in the countryside, and women's programs in Sri Lanka. Again, the potential advantage of reduced personnel costs is not necessarily seized in all nonformal programs. Among the many programs with full-time, specially-trained instructional staff, in which personnel costs would be comparable to formal programs, are Jamaica's Youth Camps, the Kenya National Youth Service, Thailand's MTTS, CARs and COPs in Mali, and Mobile Skill Training Centres in Sri Lanka.

Although many nonformal programs can make use of local low-cost personnel at the field level, this does not mean that competent, well-qualified and relatively well-paid full-time personnel are not needed in nonformal programs. The flexibility of nonformal

educational approaches makes it possible, however, to use highly qualified personnel at supervisory, planning, and evaluation levels for supporting and guiding the field-level activities, thus using relatively scarce talents to maximum advantage, multiplying the impact of professional personnel for a larger population, and reducing operational costs. Programs that have attempted to derive a multiplier effect from their specially trained personnel by placing them at the supervisory level and relying heavily on community members and volunteers for field-level activities include ACPO, ORD's extension service, Cooperative Education Centre and Wings in Tanzania, and Comilla's Thana Training and Development Centre in Bangladesh.

Self-Financing

A number of nonformal programs have been able to reduce their net operating cost burden by generating some income or in-kind contribution from program activities. The practical and production-oriented bias, particularly of the occupational training programs, makes it possible to produce commodities and services in the programs that can be sold outside or used to supplement the programs' resources.

Boys' Town in Sri Lanka retrieves almost the whole of its operating cost from the farm and industrial production and contract jobs undertaken by the students of the program. A part of the foodstuffs and other necessities of the Jamaican youth camps are produced by the campers themselves. The National Youth Service in Kenya takes contract jobs in various development projects, providing the learners with practical work experience and raising revenues for the program. An important feature of the schools-in-the-countryside program in Cuba is that students engage in agricultural and industrial production in order to learn the practical skills and subsidize the costs of the school program.

Although it is easier for the occupational-learning type of program to derive a part of its income from its own production, other types of programs that depend mainly on local resources and support can also be largely self-supporting in the sense that they need not rely on large outside subvention, the necessary materials being

provided by the learners themselves. Village self-help activities of the Sarvodaya (Sri Lanka), and the child-care, nutrition, and home-economics activities of some of the women's organizations in Sri Lanka, Kenya, Mali, and elsewhere are such examples.

Marginality of Nonformal Education Costs

As nonformal programs are able both to use existing resources and facilities without diverting those resources from other uses and to invest a relatively small amount of additional resources, the net costs of the programs are minimized. The costs of a number of nonformal programs in the ICED sample are of a marginal nature. A school-equivalence program that uses existing school facilities during the evening (when the school buildings remain unused) and also engages schoolteachers as instructors at a part-time salary (without incurring the preservice and inservice teacher-training costs or the full costs of producing textbooks and instructional materials) can be run at a fraction of the costs of regular school—one example is the school equivalency program in Thailand.

In fact, all nonformal programs that rely on part-time and volunteer personnel and facilities are enjoying the advantages of cost-marginality because they are using resources that have already been developed at some cost to society but have not been utilized to the fullest extent. The mass media programs that use the existing communication infrastructure have to pay only a fraction of the real costs of establishing and maintaining communication facilities, such as the radio network, the newspaper (when special newspaper supplements or columns are used for an educational program), and the postal system (in the case of a correspondence course).

Any educational effort that is part of a broader development effort, such as programs for youths and women within a rural extension effort (as in ORD or the integrated agricultural development projects of CADU and PACCA) enjoys the benefits of cost-marginality. The larger program provides the organizational structure, many of the physical facilities and equipment, many of the instructional and administrative personnel who are already there, and, above all, a receptive audience.

COMPARISON OF FORMAL AND NONFORMAL COSTS

It is rarely possible to make a direct comparison between formal and nonformal programs: it is not only the pedagogical process that is different but the educational goals and outputs, the program content, and the clienteles as well. Having said this, we still find that planners and policy makers in the developing countries are confronted with formal and nonformal alternatives for meeting at least two types of educational needs—that is, basic general education and vocational education. Even if the educational outputs are not strictly comparable, in these two areas of education a particular alternative may be found to be preferable if it has distinct cost advantages and the learning output is similar enough to serve the ultimate educational objective. Examples from Thailand, Kenya, Nigeria, and Upper Volta illustrate the point.

The school equivalency courses in Thailand, which are offered during the evening with somewhat abridged syllabi and use the regular school facilities and staff, allow as close a comparison as will ever be possible. These courses have no capital cost; recurrent costs include the remunerations for teachers, headmasters, administrative assistants, and the expenses for supplies and teachers' inservice training. Students in the courses pay tuition that covers the bulk (78 percent) of the costs. The per capita costs to students and the government at different levels for the complete course are shown in Table 6. The total cost per student at Level 3 is 627 bahts, 1,372 bahts at Level 4, and 1,669 bahts at Level 5. Students' share of the cost works out to be 77 percent at Level 3, 65 percent at Level 4, and 70 percent at Level 5. As a result of high popular demand for the courses, a large number of secondary schools have opened these courses without any government subsidy. By comparison, the costs of equivalent regular courses are considerably higher, even if the capital costs are not entirely charged to the formal schools. The total recurrent costs for Grades 5 to 7 (Level 3) in the regular course range from 1,300 bahts to more than 1,800 bahts. The corresponding costs in the regular schools for Levels 4 and 5 are 3,300 bahts and 2,200 bahts, respectively. The costs borne by the government in the regular courses are also higher—about 90 percent in the case of public secondary schools. The average capital cost per

TABLE 6

Comparison of per Capita Costs to Students and Government, School Equivalency Programs, Thailand, Levels 3, 4, and 5 (in Thai bahts)

	Students	Government	Total
Level 3 (Grades 5-7)	480	147	627
Level 4 (Grades 8-10)	895	477	1,372
Level 5 (Grades 11-12)	1,165	504	1,669

Source: Adult Education Division, Thailand Ministry of Education, 1972.

student place at the secondary level is 8,000 bahts, and at the upper primary level (Grades 5 to 7) it is over 2,000 bahts.

It is true that the lower costs of the equivalency courses are really marginal costs for additional use of already existing facilities and personnel. But then these facilities and personnel existed in any case and could not be used much more intensively for the regular courses. The important point here probably is not that the equivalency courses are much cheaper than the regular courses but that substantial expansion of the equivalency courses can increase the overall productivity of the educational resources and generate new educational resources in the form of higher private contribution to education. The output of the equivalency course, judged by test results and completion rates, has been found to be better than comparable to the regular courses.

Again in Thailand, a successful MTTS trainee with six months of part-time training (300 hours of instruction) costs about U.S. $100, whereas the operating cost per student enrolled in a formal vocational secondary school is approximately $300 for one year of full-time instruction. The difference between the two would be larger if the higher capital costs and higher dropout rates of formal schools were added.

The Village Polytechnics in Kenya, which offer postprimary vocational and general education to rural youths, also show a clear cost advantage over formal secondary vocational and technical schools.

The VPs, which are organized largely on a self-help basis and therefore have great variations in educational programs and facilities, were reported in 1969 to have a range of annual per trainee cost (including capital depreciation) from Shs. 220 to Shs. 1,026, and the average per capita cost is estimated to be Shs. 800. By comparison, the cost per student-year in the government secondary technical or vocational school was Shs. 2,000.

A higher cost differential was reported between part-time training in VICs and full-time courses in formal trade schools in Nigeria ($104 and $930 annual per trainee cost, respectively). Both groups of trainees were required to take the government trade tests to qualify for public-sector employment; the test results gave clear and substantial cost advantage to the VICs.

In all these skill-training cases the important issue is not the exact amount of per capita cost differential between the formal and nonformal courses but the number of formal institutions with their heavy capital outlays and operating costs the country can afford and whether the more flexible, part-time (and less costly) nonformal training courses might not better serve the nation's diverse skill requirements.

Another interesting case is Upper Volta's Rural Education Centres, which seek to provide in three years the equivalent of four years of primary education plus vocational training in agriculture and related rural skills. The annual recurrent cost per student in these unconventional rural schools averages 5,500 CFAF (16,500 CFAF for 3 years), against 12,200 CFAF per year for regular primary schools (48,800 CFAF for four years).

COST FEASIBILITY

One important question about any educational program, and particularly about pilot programs that are expected to be expanded on a larger scale if they prove successful, is whether these programs appear to be viable in terms of the total and longer-range educational needs of the country. The initial enthusiasm and support of all concerned and the concentration of resources and attention that a small pilot project often receives may make it

highly successful, but it may be a totally different situation when this pilot model is to be multiplied throughout the country. It is not just a question of the need for additional funds (often presenting a problem) but the constraints of the real resources, such as competent and devoted personnel, physical facilities, and materials and equipment, which often cannot be procured in adequate quantities, even if the funds are available. An additional issue arises from the fact that when a program is expanded many times the selectivity of the initial clienteles with their higher motivation and aptitude is diluted and the program is required to serve the educational needs of a clientele with more diversity in background, motivation, aptitude, and ability.

The issue of cost feasibility in terms of longer-range needs and total potential clientele arises conspicuously in respect to basic general education. Countries that have been able to make primary schools available to only a half or less of the children and cannot hope to cover the rest in the foreseeable future are forced to raise questions about the feasibility of the conventional primary school model, even though the country's resources can support the existing schools. It is in response to this dilemma that such countries as Upper Volta and Mali have launched the rural education centers and the "ruralization" of primary schools.

We have already noted that for middle-level vocational and occupational education, whenever options are available between the full-time vocational school approach and the part-time, shorter-duration, flexible approach, the criterion of long-term, overall feasibility favors the more nonformal approaches, even when the existing formal institutions are well supported and achieving good results.

Various other cases are probably justifiable as individual programs but cannot be viewed as viable models for solving an educational problem, because they do not pass the overall cost-feasibility test. The Boys' Town program in Sri Lanka and a number of other small agricultural and skill-training programs run by religious organizations have achieved a high level of efficiency and are partially self-financing. Yet these programs probably cannot be expanded on a large scale to serve the rural youths of the country for two reasons: First, the members of the religious order whose dedicated service has made these programs succeed are not in

abundant supply; second, the rural economies of Sri Lanka and other developing countries probably cannot absorb too many of trained youths from these courses until economic conditions have changed sufficiently for agriculture and rural enterprises to offer rewarding careers. Similarly, land-settlement schemes in Sri Lanka and the National Youth Service in Kenya, even if they are judged successful programs at their present scale, are not viable solutions for employment and occupational education for any sizable number of youths because of their high unit costs.

The lessons from the experiences cited are twofold. First, although an individual program may be relatively efficient and yield useful educational outputs, it may be quite inappropriate to view it as a model for solving an educational problem and to expand it on a large scale. Second, educational planners should be extremely cautious about pilot projects, especially those set up with external assistance, as they are often saddled with extravagant standards for facilities, equipment, and personnel. The pilot project may be highly successful as long as the external support lasts and then prove to be a white elephant for the host country.

CONCLUDING REMARKS

Available evidence concerning nonformal educational experiences leads us to conclude that the cost models and generalizations about costs derived from formal education cannot be applied uncritically to nonformal education, because these models and generalizations are based on the acceptance of standard educational technologies and pedagogical approaches that need not and would not be applicable to nonformal educational programs.

The high ratio of personnel costs is a key determinant of many cost features of formal education: the inexorable increase in costs, scarcity of funds for nonpersonnel items, limited economies from scale, and so on. Is it possible to reduce the overpowering influence of personnel costs over educational budgets in nonformal programs? As we have noted already, the answer is affirmative for many kinds of nonformal programs that need not rely on regular instructors as the main purveyors of knowledge. For many other

kinds that have to depend on face-to-face communication between instructors and learners the relative weight of instructional costs can be reduced to the extent that the various economies permitted by the flexibility of nonformal education are exploited.

One (if not *the*) major element in the present educational crisis of the developing world is the trend of ever-rising educational costs. Due to this phenomenon, no dent can be made on the enormous problem of providing basic educational opportunities to all children without such increases in educational outlays as are impossible to attain in most developing countries. A breakthrough is needed here to limit the increases and begin to reverse the process in terms of *unit costs*. The glimmer of such a possibility exists in a large-scale adoption of nonformal education approaches.

One condition for a possible reversal of the trend in unit costs is that the limits to the economies of scale would be pushed much further than where they are in formal education. Use of newer media and self-instructional methods offers this prospect. The same radio broadcast, the same correspondence course, the same printed pamphlet, and the same programmed text for certain nonformal educational courses can be used for a handful of people in one town or for as many people as are interested in these courses in a whole country—with proportionately very little additional cost.

It appears that we are confronted with a vast vista of prospects and potentialities but comparatively little hard evidence extracted from real experience. What does this state of uncertainty and unrealized prospects imply for planning nonformal education, and more particularly, for examining the costs of nonformal education projects? We venture the following general remarks.

First, no cost estimates and projections for nonformal programs made on the basis of cost models of formal education can be made usefully. The raison d'etre of nonformal education is to change the conventional "production function" of education.

Second, given the prospect and even necessity for diverse management and sponsorship responsibilities for nonformal education, the most helpful approach would be to formulate "indicative plans" for nonformal education with cost estimates based on alternative models of input combination. The alternatives have to be determined carefully on the basis of what is to be achieved educationally and what is possible in the particular situation.

Third, it is difficult to lump together direct financial costs and various nonmonetary costs. It may be necessary for the monetary costs involving inputs requiring financial transaction and real costs involving other inputs requiring no money transaction to be estimated and projected separately.

Fourth, it will be also important to estimate, project, or indicate ranges and magnitudes of costs in money and real terms to different parties—various levels of government, the educational clientele or households, and the society as a whole.

Finally, precise quantification will not be possible for some monetary costs and most of the nonmonetary costs. Planners and managers have to work with rough magnitudes and sometimes only with qualitative description (which, however, can be successively refined as time goes by).

NOTES

1. See, for instance, J. Hallak, *The Analysis of Educational Costs and Expenditure*, Fundamentals of Educational Planning Series, no. 10 (Paris: IIEP, 1969).

2. See discussion in John Vaizey et al., *The Political Economy of Education* (London: Duckworth, 1972), pp. 216, 224.

3. For details on capital and recurrent costs and how to treat them, particularly in the formal education context, see Philip H. Coombs and Jacques Hallak, *Managing Educational Costs* (New York: Oxford University Press, 1972), Chs. 8 and 9.

4. Philip H. Coombs and Manzoor Ahmed, *Attacking Rural Poverty—How Nonformal Education Can Help* (Baltimore, Md.: Johns Hopkins University Press, 1974), Table 11.1.

5. A lucid general reference on the subject is Ta Ngoc Chau, *Demographic Aspects of Educational Planning* (Paris: IIEP, 1969).

6. For a discussion of social demand for education and the manpower-requirements approach, see H. S. Parnes, *Forecasting Educational Needs for Economic and Social Development* (Paris: OECD, 1962); also OECD, *Problems of Human Resource Planning in Latin America and in the Mediterranean Regional Project Countries* (Paris: OECD, 1967).

7. See a discussion of these projects in Coombs and Ahmed, *Attacking Rural Poverty;* see also the case study by Manzoor Ahmed and Philip H. Coombs, *PACCA: Education in an Integrated Agricultural Program,* case study no. 10 (Essex, Conn.: ICED, 1972).

8. Coombs and Ahmed, *Attacking Rural Poverty,* Ch. 11.

9. Ethiopia, Ministry of Education and Fine Arts, "Education: Challenge to the Nation," Report of the Educational Sector Review, mimeographed (Addis Ababa: August 1972).

10. Coombs and Hallak, *Managing Educational Costs,* Ch. 6.

11. Mark Blaug, "Comparative Analysis of Educational Expenditures in Member Countries Since 1950: Case Study of the United Kingdom," mimeographed (Paris: OECD, March 1969).

CHAPTER

5

BENEFITS AND COST-EFFECTIVENESS

It is not very helpful, in the planning and management of education, to examine costs without looking at the outcome of the learning process. It certainly makes little sense to talk about high or low costs without relating the costs of an educational activity to the results achieved. An economic analysis of educational programs, therefore, leads invariably to a juxtaposition of the costs incurred and the benefits derived. Educational managers as well as economists are or should be interested in maximizing benefits at the least cost.

ASSESSING BENEFITS: AN EXAMPLE

The estimation of the cost-benefit relationship, however, is plagued by a number of complications. The case study of a nonformal skill training program will illustrate the practical problems of assessing costs and benefits.[1]

The Mobile Trade Training School (MTTS) program is an effort by the Ministry of Education in Thailand to offer a short, low-cost, flexible training program in nonagricultural skills to out-of-school youth in order to alleviate rural unemployment. The

objective of the program, although it has changed somewhat since its beginnings in 1960, is best reflected in the following statement:

> . . . to provide skill training to individuals with a minimum of four years of formal education and little or no opportunity to continue in the formal education system to enable them to obtain employment, upgrade their employment capability or improve their domestic situation.[2]

The typical MTTS offers from seven to ten trade courses, chosen from a standard national list of about a dozen trades, in part-time afternoon and evening sessions over a five-month period.* It is located in one or more temporarily-acquired buildings in one of the district towns and operates for one to three years in one location before moving to another district. An average school in 1971 enrolled 510 trainees per year and annual output of completers per school was 330.

The assessment of both costs and benefits of MTTS was found to be difficult, first because quantitative data were inadequate and imprecise, and second, because many elements, particularly benefits, were not quantifiable. The primary difficulty in the cost data was that the budget figures available from the Vocational Education Department were in highly aggregated categories, many of which included costs that were not exclusively for the MTTS program. Moreover, there were considerable extrabudgetary income and expenditure in the program, the full records and breakdowns of which were not available. Nonmonetary costs in the program were not considered to be significant because there was no community participation in the management of the program and little voluntary in-kind or service contribution. Opportunity costs for the trainees in attending the courses were also considered to be negligible, because a choice of two three-hour shifts each day was available.

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*The repertoire of courses, in order of their popularity with trainees, is as follows: dressmaking, automechanics, tailoring, radio repair, electric wiring and installation, cosmetology and hairdressing, food preparation, welding, typing, bookkeeping, barbering, embroidery, and woodwork.

On the other side of the cost-benefit equation, the two main dimensions, not necessarily mutually exclusive, are benefits derived from the program by individual trainees and the contribution of the program to rural-employment promotion and economic welfare—a primary objective of the program. The main items that can be specified as individual benefits are increased earnings as a result of the training for those who were employed before training, new employment opportunity as a result of training, increased options and flexibility in employment (resulting in monetary and nonmonetary benefits), and increased efficiency and skill as housewife, mother, and homemaker (resulting in monetary savings for the family and other benefits).

The program's possible contribution to rural employment and welfare is more difficult to itemize, partly because "rural" in the parlance of Thai bureaucracy often means the entire country outside metropolitan Bangkok, including fairly large provincial towns. But 85 percent of the Thai people live in small villages where agriculture is the main economic activity and where there is neither the clustering of population nor the diversity of socioeconomic services and activities typical of a town. These villages can be served by a nonagricultural skill development program like the MTTS if training is offered in such nonfarm skills as maintenance and repair of farm equipment, construction of rural housing, roads, irrigation channels, and so on, in various artisan, craftsman, and commercial trades, and in homemaking; if the trainees set up enterprises or become employed in the villages as a result of their training; if the trainees coming from the village can use their training to take up gainful employment in the town, thus alleviating the rural employment problem; if the trainees, even if located in the town, produce services and goods for rural consumption that cannot be efficiently produced in the village; and if, through their acquired skills, the trainees contribute to better home and family life and become more valuable members of the rural community. (These theoretical possibilities may actually conflict with each other and are unlikely to be realized through the same program; the purpose here is simply to indicate the range of possibilities.)

All these possible individual and social benefits of the MTTS program present different orders of measurement and estimation problems. Despite the statistical difficulties regarding part-time and

full-time employment and voluntary withdrawal from job markets, as well as the potential earnings had there been no training program, it is possible to arrive at a monetary value of the training program in terms of increased earnings, provided enough time and efforts are spent to collect the needed information. It would, however, be difficult to assign meaningful quantitative values to increased employment options and increased efficiency of homemakers.

Statistics on the number of courses and trainees in different rural skills can easily be gathered. It is also possible, if an adequate tracer system for trainees is worked out, to enumerate the new rural enterprises and employment promoted by the training and the number of trainees finding employment outside the rural neighborhood. But it would be much more difficult to quantify the goods and services produced for rural consumption by former trainees of the program, and it would be impossible to express numerically the contribution of the program to better home, family, and community life. Thus, although useful numerical data indicative of individual and social benefits of a skill-training program can be derived, those data by themselves provide a very partial picture of the program's benefits and the cost-benefit relationship.

For the MTTS, in reality, even those data that could be relatively easily collected were unavailable. During the life of the program, in which period it has seen a rapid expansion, there has been little effort to evaluate its costs, benefits, and effectiveness. The one serious evaluation attempt undertaken in 1971 at the behest of the National Economic Development Board provides information about enrollment, dropouts, and completion of course in eight sample MTTS, but it provides little information on benefits unrelated to employment and includes nothing on costs.

The case study prepared for ICED relied on available information on the costs and benefits of the program without devoting the needed time and resources for generating new data through in-depth field investigation. The main conclusions of the study regarding costs and benefits of the MTTS program are the following:

1. The 1971 survey of the program shows that a little more than half of the graduates of courses were holding some sort of full- or

part-time paid employment but that less than half of those in this group were using the skills learned in the MTTS in their jobs.

2. There was a lack of clarity about how the program content and its learning outputs would help achieve its main objective of rural employment generation and rural economic welfare. The courses offered were those found commonly in standard vocational education programs for urban areas. None of the rural and agriculture-related skills was included in the selected list of trades. The program planners and managers were vague about the ways that the learning outputs of an urban-oriented skill-training program would be translated into benefits for the rural clientele.
3. The employment-promotion effect of the program was found to be undermined by three major weaknesses: First, there are no linkages of the training program with necessary complementary services, such as credit, marketing, supply of raw materials, or design and management assistance, even though many of the trainees are expected to be self-employed. Second, the program does not take sufficient account of the regional economic variations, the dynamics and prospects of the local economies, and the capacity of local economies to absorb the trainees. Third, the program does not show cognizance of indigenous and traditional ways of rural skill development, the strengthening and upgrading of which, wherever feasible, can probably better fit the learners to rural occupations than training models imposed from outside.
4. The program failed to exploit various cost-saving potentials offered by a nonformal program, such as using varying course durations for different skills, relying at least partially on local draftsmen and skilled workers on a part-time basis, instead of on full-time professional staff as instructors, or utilizing the full capacity of the schools by careful selection of courses and school locations and more frequent mobility.
5. The program suffers from a general lack of a middle-level skill-training policy and strategy in the country, resulting in overlap of training in certain trades, unemployment and underemployment in some of the skills taught, and a training vacuum, particularly in agricultural processing, operation and maintenance

of farm equipment, rural construction, and various types of rural artisanship and handyman skills.*

As the Thai program indicates, two types of problems (besides inadequacy of cost data and the difficulties of quantifying cost information, discussed in Chapter 4) arise in the assessment of benefits. Those problems originate from the nature of benefits from educational activities and from the relationship of the learning process to benefits.

Nature of Benefits

Benefits of the same educational programs are of various kinds. With the Thai skill-training program as our example, the range of benefits that have been actually derived or could be potentially derived can be characterized as economic (in the form of increased earnings, productivity, and employment for the learners) or non-economic (considering increased occupational options, socioeconomic mobility, and greater efficiency in the management of home and family); individual (accruing to the learners themselves) or social (accruing to the community through the individual learners). They can be seen as continuous and cumulative: the benefits may continue to accrue indefinitely, sometimes right through the next

*We hasten to add that, despite its weaknesses, the MTTS program remains an innovative effort in vocational skill training for a segment of population (out-of-school youths with only primary education) that has access to few other such opportunities. The cost per successful trainee (about U.S. $130, including amortized capital outlay for 300 hours of training) compares favorably with annual per trainee current costs (not excluding dropouts) of U.S. $300 in vocational secondary schools. The short-duration, part time, practical, flexible, and relatively inexpensive programs of the MTTS genre have great potential for being more effective and efficient in teaching vocational skills than does the predominant pattern of long-duration, institution-based, full-time, and more expensive formal training programs that are often very much devoid of practical experience in the skills.

generation, as a result of the impact on family and children; the benefits may accumulate throughout the life of the learner because the learning outcome is not used up like physical investment. Benefits might be planned and predetermined (some of the benefits are envisioned in the plan of the program and are included in the program objectives as the ultimate outcome of the learning process—for example, increased employment and improved family life in the MTTS program); incidental byproduct (other unforeseen benefits may be the outcome of the educational program—to take a hypothetical example, the improved status and greater independence of girls, because they are able to supplement the family income); or even nonapparent or unsuspected (some benefits may not be readily apparent or easily perceived—to take another hypothetical example, the positive effect of the skill-training program on promoting distributive and economic equity in the rural community). Any fair assessment of benefits should take into account these various dimensions, and these categories of educational benefits are not exhaustive or mutually exclusive. Individual benefits are included in the totality of social benefits and the economic-noneconomic dichotomy overlaps with other characteristics of benefits.

Learning Process and Benefits

The relationship of the learning process to the educational benefits is not generally direct and immediate; this is an obvious source of difficulty in establishing a cost-benefit relationship. The direct output of an educational activity is made up of learning achievements, such as increased knowledge, skills, understanding, and changed attitudes. The ultimate benefits of education are derived only when learning outputs are put to effective use. That is, it is not the learning process outputs per se but how these outputs are used that determines benefits. Effective use of the learning outputs is not necessarily a function of the cost inputs of the educational program,

and it is affected by a host of factors extraneous to the educational program itself.*

Drawing on the Thai case and other examples of nonformal programs, it is possible to categorize the major factors that affect the utilization of learning outputs for individual and social benefits, thereby influencing the cost-benefit relationship of educational programs. These categories include general ecological endowments, which impose basic constraints on the socioeconomic development of the area served by the educational program; economic dynamic and prospects of the area affecting economic opportunities, and the employment condition and prospects; provisions for necessary supplies, such as agricultural inputs, raw materials and equipment for rural industries, and medical and family planning supplies; physical infrastructure, including roads, irrigation and water-control systems, community facilities, such as health clinics and primary school buildings, communication facilities, and so on; institutional infrastructure, including local organizations, development planning and implementation mechanisms and capacity, marketing and credit, land tenure, social structure and mobility, and so on; and overall national and local educational policy and strategy, which place the individual program in a broader context and define its links with other programs, enhancing the effectiveness of individual programs, as well as that of the learning system.

Besides the external factors affecting the use of learning outputs there are, of course, other external and internal influences that affect the cost inputs, as noted in Chapter 4. The combined and interacting influences of all these elements determine the cost-benefit relationship. The intricate web of connections among educational inputs, learning process, direct learning outputs, ultimate benefits, and the interaction of the program with the total environmental context is graphically represented in Figures 1 and 2.

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*In some educational programs—for example, an art appreciation course—the process output itself may be the same as the intended benefit of the program. But in most cases, to the extent that education is an *instrumentality* for development and increased individual and social welfare, the learning process outputs need to be translated into individual and social benefits through effective use of these outputs.

FIGURE 1

The System View of an Educational Program

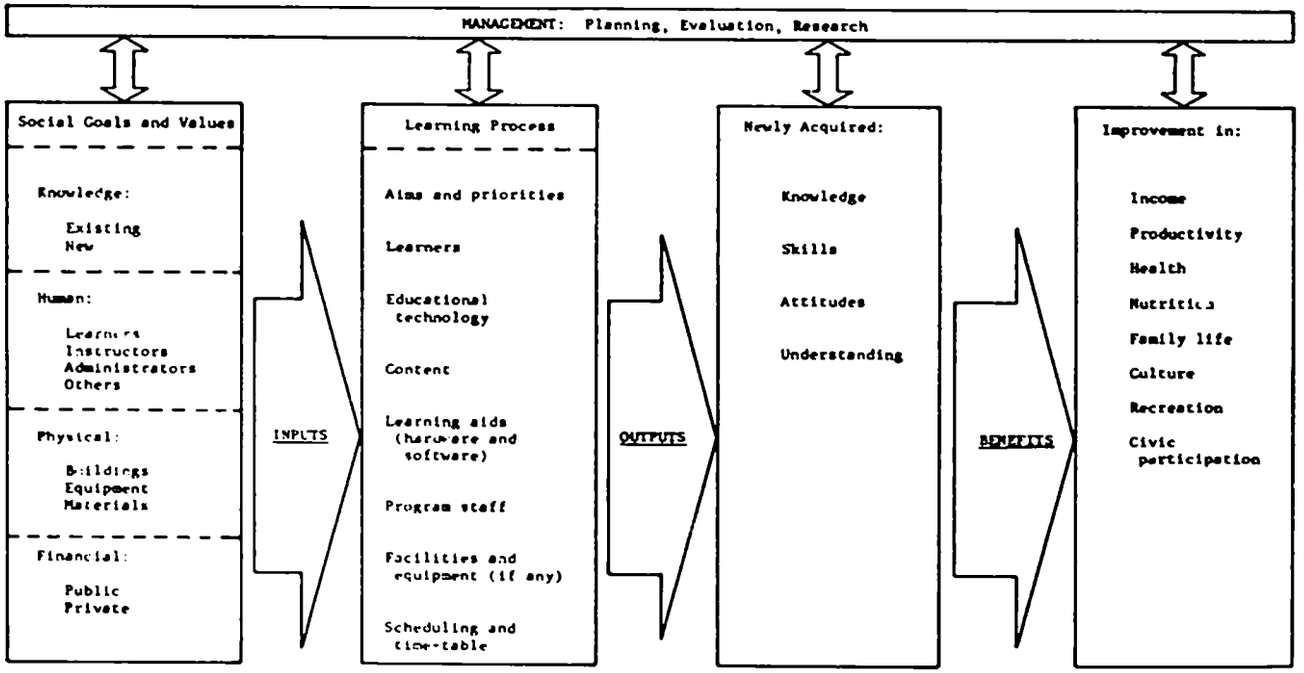
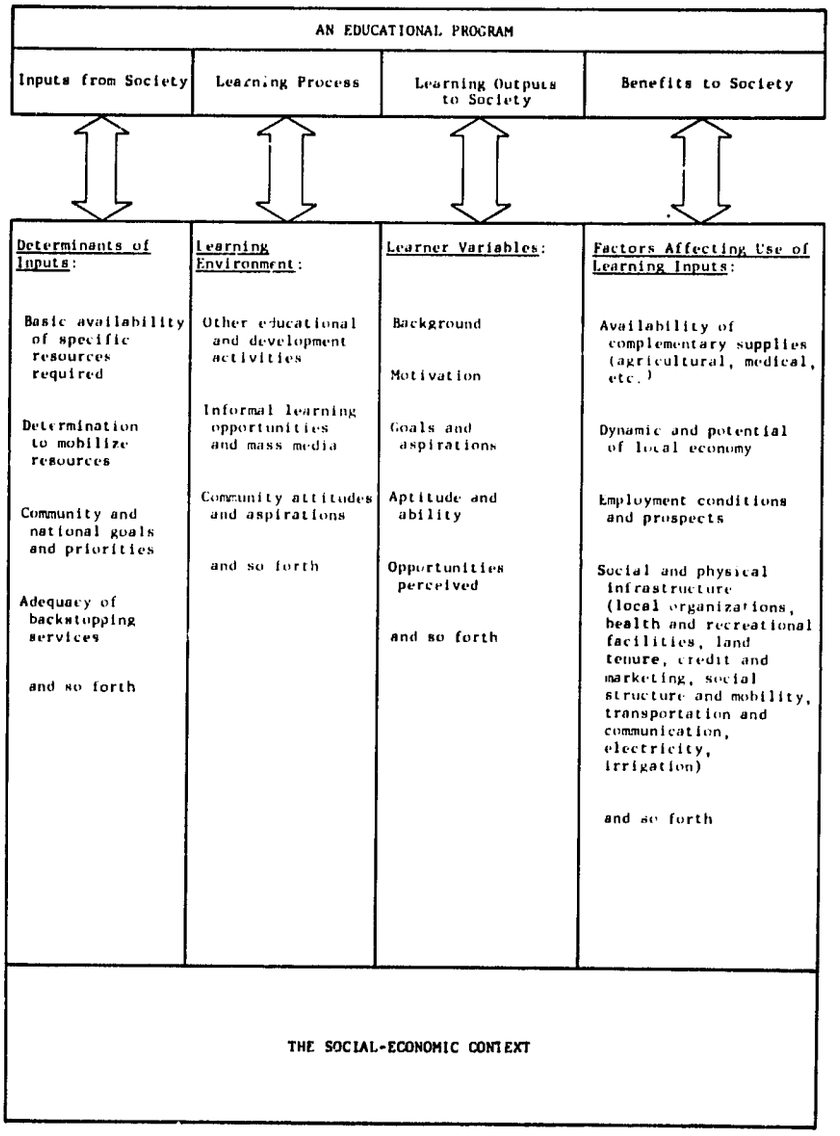


FIGURE 2

Interaction between an Educational Program and Its Socioeconomic Context



RELATING BENEFITS TO COSTS

The relationship between the benefits derived from an educa-
onal program and the cost inputs is referred to as the external
roductivity of the educational program. Expressed in numerical
:rms, external productivity is the same as the benefit-cost ratio.
he relationship between cost inputs and the direct learning out-
uts such as knowledge, skills, and so on, embodied in the learner is
nown as the internal efficiency of the educational program.[3]

The discussion earlier in the chapter has shown that although
ıternal efficiency and external productivity are related, the rela-
onship may not be linear. High internal efficiency does not
ıarantee high external productivity, though generally a high
:nefit-cost ratio implies a high measure of internal efficiency. In
.ct, a program can have high internal efficiency and low or nega-
ve external productivity—for example, when a program uses the
:sources efficiently to teach the wrong things in terms of the real
:eds of the learners or of the usability of what is taught.

Evaluations of educational programs, however, often focus on
ıe internal efficiency of the educational program: the pedagogic
:ocesses, the direct learning achievements, the number of learners
ho complete the course, and the corresponding cost inputs. Inter-
ıl efficiency measures are sometimes equated to cost-effectiveness
ıeasures, implying that the effectiveness of a program is judged by
ıe immediate learning outputs.[4] Assessment of the cost-benefit re-
tionship requires the examination of internal efficiency, but the
:sults of such an examination alone will not answer the significant
)st-benefit questions.

To sum up the above discussions, there are obvious problems
ith external productivity measures (or cost-benefit analysis) and
ternal efficiency measures (or cost-effectiveness analysis in the
ırrow sense) as bases for relating costs and benefits. Cost-benefit
ıalysis is more of a notional concept, because the full range of
:nefits from a program can hardly be quantified or even estimated.*

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*One method of cost-benefit analysis—the rate-of-return study—has been
rticularly appealing to some economists, because it purports to demonstrate

Cost-effectiveness analysis also has its own quantification and measurement problems; moreover, it indicates only the efficiency of the learning process itself rather than the degree of effectiveness in achieving the ultimate educational objectives.

A COST-EFFECTIVENESS FRAMEWORK

What would be extremely useful from a practical educational planning and management angle is a pragmatic compromise between the narrow internal efficiency approach and the impossible task of a total cost-benefit analysis. Judging a program's value, deciding whether it is achieving its main objectives at a reasonable cost, and improving its performance—such efforts can be enormously helped by attempts to juxtapose the known cost inputs against the evidences that can be gathered of the achievement of the main stated and predetermined objectives and the intended benefits of the program. This modest but feasible effort can be a firmer basis for forming a realistic cost-effectiveness judgment about a program than the misleading "precision" of internal efficiency measures, the benefit-cost ratio, or the rate-of-return.

The meaning of the term "cost-effectiveness" here is taken to be broader than a synonym for internal efficiency. It is certainly more useful for planners and managers of education to view cost-effectiveness as the relationship between costs and the stated objectives of a program or whatever proxy measures or indications of their attainment are available than to equate it to the relationship between costs and the immediate process outputs, which, by itself, is unimportant.

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the economic return to the investment in the educational program and to provide a basis for making educational investment decisions. It is, however, becoming generally accepted now that although a useful analytical tool in some situations, the rate-of-return study is certainly an inadequate basis for educational decisions and can even be misleading if only because it takes into account an incomplete view of both costs and benefits. For a critique of this technique see Samuel Bowles, *Planning Educational Systems for Economic Growth* (Cambridge, Mass.: Harvard University Press, 1969).

The concept of the cost-benefit relationship, however, should not be considered useless or redundant. The role of the stated objectives and intended benefits is emphasized in cost-effectiveness analysis, because only what is stated and intended is susceptible to the planning and management process, not the incidental and unsuspected by-products. However, the hypothetical construct of total benefits provides a framework for cost-effectiveness analysis and a rationale for constantly attempting to improve the cost-effectiveness of programs. It is possible retrospectively to examine the incidental benefits and their relationship to the cost inputs; this information can then become incorporated in subsequent program planning and cost-effectiveness analysis.

However, cost-effectiveness analysis—relating cost inputs to stated and predetermined objectives and benefits—cannot be expected to yield precise numerical ratios of returns to educational investments or firm quantitative comparison of the efficacy of different educational activities. The resource inputs and the immediate and cumulative outputs and benefits of the educational process, as we have noted, are of categories too diverse and too intermixed to allow a high degree of quantitative precision.

Cost-effectiveness analysis can be a very useful tool for the planning and management of educational programs, if it is used to seek the best available evidence regarding questions such as the following:

Does the program follow the least costly alternative for achieving its educational goals?

Does the program follow a feasible educational approach in terms of the program's long-range viability and meet the learning needs of a sizable proportion of the potential clientele?

Do the learning outputs fit the ultimate objectives and benefits intended from the program?

Does the program fit into a broader design for meeting the "learning needs" of the population, particularly those needs that are related and complementary to the needs served by the particular program?

Does the program meet set criteria, if any, regarding who pays for the program and who benefits from it?

The question regarding the least-cost alternative refers to the internal efficiency of the educational program. The aim of the

analysis here would be to judge whether the program's content and technology are appropriate for the learning objectives and the clientele, whether the flow and pattern of inputs fit the specific requirements of the technology, whether the input costs can be cut without significantly affecting the output, or whether a small increase in costs can result in a more than proportionate increase in output. (In other words, does the program require a critical mass of inputs? Is there an input threshold that must be reached for the program to operate at optimal efficiency? Are there economies of scale to be achieved?) There is no easy formula for discovering the least-cost approach in any particular situation. Experimentation and trial of alternative technologies and input combinations, wherever feasible, can provide important clues. Most important, however, are the interest and willingness on the part of program planners and managers to search for and consider possible alternatives.

An important test of cost-effectiveness, particularly in the case of a pilot project or a small-scale operation that is planned for expansion over a period of time, is whether the magnitude of resources and inputs required for the program on a longer-term basis to serve the entire target population could be provided. This is a valid question, even if the benefits for the pilot phase are relatively high, because that is of little consequence if the necessary inputs for the expansion of the program are not available. Various mini-programs (often spawned by external assistance or voluntary agencies), attempting an insignificant assault on a massive educational problem, are particularly susceptible to this weakness.

The ultimate test of the cost-effectiveness of any program is whether the knowledge, skills, and understanding gained from the educational program have been or can be put to use to derive the benefits that the program is expected to produce. Learning is an instrumentality for achieving certain ultimate objectives for individuals and society—for example, more employment, better nutrition, or more effective civic organizations. The educational program is more or less cost-effective only to the extent that those objectives are served at different levels of cost. The key questions here are whether the objectives (intended benefits) are defined with reasonable clarity, whether there is a workable

concept of the way that the learning outputs serve the ultimate objectives in the particular socioeconomic context, and whether the actual learning outputs conform to this concept (that is, whether the learning outputs fit the objectives). Far too many educational planners and managers fail to pay sufficient attention to the crucial issue of the ways that the learning outputs get translated into the intended (and by-product) benefits, thus often dealing a mortal blow to the cost-effectiveness of educational programs.

The next question relates to increasing efficiency and effectiveness of individual educational programs by recognizing its links with other educational activities that directly or indirectly may provide prerequisite, complementary, and follow-up learning opportunities. Individual and community learning needs are not carved up in segments to conform to specific program jurisdictions. To the extent that the totality of learning needs is recognized and individual programs are organized within a broader framework of programs designed to meet a range of learning needs, the effectiveness of both individual programs and the entire learning system of related programs is increased.

Educational programs, besides serving the primary objective of disseminating knowledge and skills, may also be intended to promote social equity and to alleviate existing disparities through opening up educational opportunities to hitherto neglected segments of society and distributing the burden of educational costs "equitably" among the learners (when costs are charged directly to students) and/or population groups (when costs are covered by finance measures). Economic analysis can show who is paying for the educational services and who is enjoying the benefits of the service directly and indirectly. Sometimes it may be considered necessary to tolerate "inefficiencies" of resource use for the sake of promoting equity. The program still would be seen as having a high degree of cost-effectiveness, if it manages to serve the goal of equity with relative effectiveness.

It is clear from the above discussion that the kind of cost-effectiveness analysis envisaged here would not follow a purely economic and quantitative measurement approach resulting in absolute answers about the comparative effectiveness of programs or the justification of particular investment decisions. Nor should

it be viewed as an esoteric exercise undertaken once and for all by outside evaluators and experts for the benefit of the ministry of finance or the external assistance agency. The most important use of the concept of cost-effectiveness is the application of its logic and analytical framework on a regular basis by the planners and managers of programs to arrive at the best possible judgmental answers to essential operational questions about their programs.

COST-EFFECTIVENESS ISSUES: EVIDENCE FROM PROGRAMS

In this section some general issues about the cost-effectiveness of a number of nonformal education programs will be discussed.[5] The programs discussed fall under the categories of agricultural extension, occupational skill training, literacy and basic general education, multipurpose community improvement, and mass media programs.

It should be stressed that generalizations about the cost effectiveness of a particular type of nonformal education, though helpful in identifying problem areas and crucial issues, should be applied with great caution in individual cases; each program, in fact, has to be examined in its own context. We have, of course, not undertaken full cost-effectiveness analysis of the individual programs cited. The purpose of referring to these programs is simply to indicate the significant issues that arise in attempts to apply the cost-effectiveness framework to various types of nonformal programs and the ways that this can be helpful in providing clues to important planning and management questions.

Agricultural Extension

Agricultural extension is the most common type of nonformal education in the rural areas of the developing countries, and it deals with the most important economic activity of these countries: agricultural production. Yet, looking around the world, it is

difficult to form a clear picture about the cost-effectiveness of individual extension programs; and when some judgments or impressions are possible, they are more often negative rather than positive, excepting some isolated instances.[6]

The absence of a cost-effectiveness picture of extension programs and their weaknesses, which could be identified and remedied by applying a cost-effectiveness framework of evaluation, stems from paying inadequate attention to three crucial factors: a) links with provisions for inputs and other support services, which would enable farmers to put the messages of the extension service into practice; b) provisions for the generation and adaptation of new knowledge through research, field trials, and feedback from farmers, ensuring a continuous flow of relevant messages; and c) provisions for keeping personnel abreast of new knowledge needs and for using them efficiently, involving farmers themselves in the dissemination and adoption of new practices, which is particularly important because the size of the clienteles is typically large in extension services.

ORD in Korea

The Office of Rural Development (ORD) in the Republic of Korea manages a nationwide rural extension service focusing on increasing rice yields and helping rural families through diversified farming and promoting cottage industries.[7] To our knowledge, no cost-effectiveness appraisal has ever been made of ORD, but it is generally agreed that ORD deserves a share of the credit for the average annual increase of more than 4 percent in the country's agricultural production during the 1960s. During the same period, ORD's extension efforts were accompanied by sweeping land reform, giving the majority of South Korea's farm families their own modest holdings and creating the incentive for them to learn better techniques and improve production; the building of a national structure of agricultural cooperatives that distributed credit, fertilizer, and other supplies to almost 100 percent of the farm families; and the expanding of the agricultural research system into a nationwide network of specialized research centers and experiment stations. ORD also has built a cadre of over 100,000 local volunteer leaders from the farmers, providing the vital link

between the 6,000 government extension workers and more than 2 million farm families.

ORD is by no means the example of a perfect extension service. It has its own problems of maintaining a flow of relevant and valid messages, working in concert with the cooperatives and the local administration, training and keeping competent staff in the service, and reconciling the conflicts between the urgent needs for increasing production (particularly rice) and for promoting overall well-being of rural families, which involves much more than high rice yields. But the extension service has apparently made significant contributions to rural development and that has been possible because attention has been paid to creating the condition for the extension service to perform effectively.

IADP in India

It is an open question to what extent the extension service contributed to the impressive achievement of India's Green Revolution in the late 1960s. The weight of informed opinion seems to be on the negative side of the balance. Village-level workers had for over a decade valiantly tried to propagate new techniques and practices when there had been no commitment of resources, no administrative and political resolve, no research effort, no provisions for supplies and credit of the magnitude and scale that came later with the Intensive Agricultural District Program. There was not even the technology of the new seed, which offered the promise of doubled or tripled yield for the farmer, instead of the mere 10- or 20-percent increases that the farmer could have expected earlier. But when the new technology arrived, the village-level worker was found to be simply too poorly qualified to be effective as the technical diagnostician of local agricultural knowledge needs and the provider of knowledge to fill these needs. The new technology, therefore, came to be more readily available and adopted by the larger and more progressive farmers who could bypass the village-level worker to go on their own to the sources of knowledge and services at the block and district levels.

There is little doubt, however, that the work of the extension service within the community development program for years had created among Indian farmers a foundation of receptivity and

positive attitudes toward agricultural transformation, particularly the new technology and its possibilities.

PACCA in Afghanistan

The Program for Agricultural Credit and Cooperation (PACCA) in Afghanistan was designed as an integrated agricultural improvement program that itself would provide the major imputs and services–farmer extension and training, staff training, credit, fertilizer and other supplies, and processing and marketing– in two selected areas in the country.[8]

Although the program succeeded in achieving substantial increases in production, it was handicapped by a number of factors related to national institutions and policies beyond its control. Bottlenecks in credit arose due to the policies of the National Agricultural Bank and the failure of the legislature to pass a cooperative and credit law. As soon as the higher yields turned out to be larger than what local marketing channels could absorb, government trade and marketing policy changes were required but were not forthcoming. The general low level of education, the urban-oriented aspirations of educated youths, and the rigidities of the agricultural institutions impeded the supply of well-qualified local candidates for staff positions.

In addition to the above problems, the program adopted an educational approach that requires an almost one-to-one tutorial technique of instructing farmers. The program cannot become viable in the long range or expanded more widely if the present high extension agent-farmer ratio is not reduced drastically and if solutions are not found to its marketing and credit problems.

Occupational Training Programs

A large assortment of nonformal occupational training programs exists in most developing countries. A majority of these programs are concerned with nonfarm artisan, crafts, and skill training. There are, however, farmer training centers, other organizations that concentrate on agricultural training, and still others that

combine agricultural training with other kinds of skill training. Some of these offer initial training to youths seeking to enter an occupation; others are for upgrading and supplementing skills of those already employed. Some of the nonformal programs are institution-based with regular schedules and training approaches similar to those of formal programs, whereas others are more flexible in their methods and content.

The most important cost-effectiveness issue regarding the nonformal occupational program stems from the fact that there is a pervasive tendency in these training programs to let their educational approach and techniques be circumscribed by the familiar formal training models. The result is often that the nonformal programs are also saddled with many features of formal programs, such as a fixed specially-built physical facility, full-time instructional staff with special formal qualification requirements, full-time course schedules, and so on, even when these are not essential to the purpose of the program. The main question, therefore, is to what extent the program has taken advantage of the various kinds of flexibility that the nonformal approach offers. Particularly, it must be asked whether the program utilizes the cost-reducing possibilities in facilities, personnel, timetable, and materials, and in the learner's opportunity costs; whether the program adapts its content and methods—particularly the degree of skill specialization and the combinations of skills offered in various rural, urban, and semi-urban contexts—to the specific needs of the learners; and whether the training programs are sufficiently linked with other development activities in the area, which would ensure the use of the skills taught.

MTTS in Thailand

It has been noted that although a segment of the trainees of the MTTS program in Thailand is using the skills learned in the program, evidence is unclear about the rest. However, the cost-effectiveness of the program can be improved by designing the training content on the basis of prior exploration of the kinds of training that are most needed and that can offer the most promising employment opportunities in the vicinity of each school. It can also be improved by adopting cost-saving measures, such as employing local artisans and skilled workers as part-time instructors, and by taking some follow-up

ons, such as monitoring former trainees to determine whether
how they are using the newly acquired skills and offering
stance and technical advice to those trainees who want to estab-
their own enterprises.

s in Kenya

he Farmer Training Centres (FTCs) in Kenya are residential
ning centers designed to help traditional subsistence farmers
e the difficult transition to more modern commercial agricul-
. A typical FTC, staffed by three or four full-time staff sec-
ed from the agricultural extension service, serves 50 to 60
ners (or their wives) at a time, brought to the center for a
k's training. The facilities include a dormitory, offices, class-
ms, a dining room, lecture hall, and a farm of 100 or more
s.

he available evidence from somewhat limited evaluation ef-
s shows that FTC farmers have a higher rate of adoption of
mmended practices than others; they have some positive in-
nce on their neighbors in respect to new farming practices;
have a higher cash income and living standard than other
ners; and a high percentage of them name FTC as the major
ce of their information on new practices.

uring recent years, however, a number of problems have be-
e evident: Serious underutilization of capacity has developed
1971, 40 percent of the places remained unfilled and 30 per-
of planned courses were cancelled); the attendance rate of
ners and their wives dropped by 45 percent between 1966 and
1; the staff turnover has become excessively high, and staff
ale has sagged; the centers have been facing difficulties in
ring adequate budgets. The problems of FTCs seem to have
n from a number of factors, such as the residential full-time
ures of the courses, which impose a heavy opportunity-cost to
ners and their wives, who find it difficult to leave their farms
homes; the relatively high cost of the residential, full-time
cational approach of FTC; insufficient links of the training
its content to other agricultural and rural development activi-
that can lend relevance and purpose to the training; and poor
ivation, incentives, and preparation of the staff, who are

removed from regular career opportunities in the extension service when they are seconded to the FTC.

IRRI Rice Production Training

The Rice Production Training Program of the International Rice Research Institute (IRRI) in the Philippines is an initiative by the well-known agricultural research center to provide special training to personnel of national extension services so that they in turn can help the extension systems spread new knowledge to rice farmers.[9] The six-month upgrading program, which draws upon the personnel and facilities of the institute, proved highly successful according to test results.

Though the IRRI training program was technically effective (in terms of the learning output), its cost-effectiveness—in terms of achieving the objective of accelerating the adoption of high-yielding rice varieties—left much to be desired. No definite answer was available to the questions concerning the number of trainees who went back home and spread what they had learned to extension workers (and through them to farmers) and their success in getting farmers to adopt the new techniques. As of 1971 it was estimated on the basis of informed guess at IRRI that probably 30 percent of the trainees were actually engaged in training extension agents in their own countries, though the picture varies from country to country. It was evident that despite the excellence of the training itself, as much as two-thirds or more of the resources devoted to the program were more or less wasted, because only a fraction of the trainees had used their new knowledge for achieving the central objective of the program.

Literacy Programs

Almost all developing countries have small or large literacy programs for adults and out-of-school youths. Many ministries of education, which hesitate to recognize agricultural extension or indigenous on-the-job training as educational programs, tend to equate literacy courses with nonformal education.

Both the traditional literacy programs and the more recent UNESCO-sponsored functional literacy programs[10] are distinguished for not being subjected to cost-effectiveness analysis. The reason, at least partly, is that myths and sentiment rather than realistic planning and hard-headed management dominate the operation of literacy programs. Far too many programs have been spawned by nothing more than a well-meaning faith in the virtues of literacy rather than being guided by a clear concept of the ways that and the circumstances in which literacy can help people and what is the best method of giving literacy to those who are underprivileged and deprived in many respects.

It is particularly surprising that despite more than a decade's experience and more than a dozen UNESCO-initiated experiments in as many countries, the lessons about the performance of functional literacy courses are not very clear—because no comprehensive evaluation has been attempted so far. The scattered evidences from field reports and the fragmented and limited evaluation of functional and other literacy programs suggest that the major requirements bearing on the cost-effectiveness of these programs are as follows:

1. A conceptualization of the ways that literacy would contribute toward improving the well-being of the learner. It is simply not true that all illiterates in villages of developing countries are anxious to acquire literacy or that once they are armed with the tool of literacy, they all can and will use it for their own betterment. Moreover, in backward villages probably one or two literates in a kinship group can perform for the whole group all the functions that call for literacy, such as writing letters to the relative in the city, reading instructions on the bag of chemical fertilizer, interpreting a contract with the land owner, and relating the political gossip of the week from the newspaper.
2. The discovery and application of appropriate teaching methods. Far too many courses use the typical didactics of the primary school, treating adults as little children, severely straining their patience and self-esteem. The frequent use of ill-prepared primary teachers as literacy instructors only reinforces this tendency.
3. The provision of relevant reading materials to literates. Clearly, when the neo-literates have few materials that they can read with interest, and particularly when the general socioeconomic context

does not urgently require reading or writing for most people, what is learned cannot be retained long, and the motivation for learning cannot be high.

4. The adoption of an educational approach that is feasible in terms of resources and the potential clientele. While the total budget for literacy in most countries is not high, because the programs serve small segments of the potential total clientele, the effective unit costs often turn out to be high when the very high dropout rates and the relatively low retention rate of literacy are included in the calculation. For example, in a North African country the cost in an adult literacy program per enrolled student was $32.80, but, since only one person in 50 completed the three-year part-time course, the cost per literate was close to $1,600. Even then, there was only a 70 percent probability that those who completed the course would have acquired simple literacy—thus, the effective cost was raised further. By comparison, one primary student could be brought to the end of the fourth grade, considering the total primary education budget, for $600.[11]

Functional Literacy and Family Life Program in Thailand

The educational philosophy and approach of a pilot functional-literacy and family-life program run by the Adult Education Division of the Thai Ministry of Education stand in sharp contrast to those of most literacy programs. The "curriculum" of the program has been developed on the basis of an exploration of the fundamental beliefs and concepts by which the villagers live. Discussion and analyses of these concepts and the need for modifying them when necessary provide the content of the lessons. The lesson units contain loose-leaf sheets depicting the concepts graphically and with key words. Though most of the instructors in the program are primary teachers, they have been given an intensive orientation on the "new" approach and have been continuously guided by a cadre of supervisors.

The impact of this pilot program on people's attitudes, behavior, and literacy habits is not yet clear, although initial evaluation results as of 1973 appeared to be promising. The dropout rate was low in some areas, but went as high as 30 to 50 percent in other areas, apparently depending on the competence of the instructors. The

program has no significant capital cost. The estimated average cost per student for the full eight-month course adds up to roughly 300 bahts ($15), about half the annual recurrent cost per student in the government-supported lower primary schools.

MOBRAL in Brazil

MOBRAL, a national semiautonomous government organization tied to the Ministry of Education in Brazil, was set up in 1970 with two main objectives: the elimination of illiteracy and the provision of school equivalency education and vocational training opportunities that would facilitate the entry of new literates into productive employment. Up to 1973, however, MOBRAL activities remained confined to literacy courses.

An examination of the MOBRAL program in the northeastern state of Pernambuco, one of the least developed in the country, showed that in 1972 about 125,000 people or 5 percent of the illiterates in the target age group of 15 to 35 years, mostly from the urban areas, were participating in literacy courses. The literacy classes are organized by the municipality or other local organizations, and teachers are paid according to number of students enrolled. The teaching content is standardized for the whole country and produced centrally for MOBRAL headquarters.

MOBRAL's sources of support include tax-deductible contributions from commercial concerns, a 30-percent share of the national sports lottery proceeds, and annual government grants. But MOBRAL covers only a part of the cost of local courses; the balance is expected to come from local government budget or community contribution. Out of an average per participant cost of Cr. 56 in 1972, MOBRAL's contribution was Cr. 21.

While MOBRAL has launched a national campaign, built up a nationwide organizational structure, and has substantial resources at its disposal, evidence regarding the program's achievements—the number of illiterates or semiliterates that have achieved mastery of usable literacy, the extent to which the skills have been retained, and the practical use to which these have been put—has not yet been available. The greatest problem area seems to be the development of a concept and a strategy for the ways that literacy skills taught through standard contents and methods to a target population

covering a large segment of adult illiterates can be put to effective use and can be of help to the poverty-ridden rural population in the state of Pernambuco.

Local Multipurpose Programs

There is a long tradition in most developing countries of various small and scattered local self-help programs, originating either through dedicated and inspired local leadership or through the sponsorship of a national movement with philanthropic and socio-economic-development goals. These multipurpose community-improvement programs play important educational roles either directly, by including specific educational activities related to the development goals of the programs, or indirectly, by promoting new behavior and attitudes through their development activities.

There are three significant common features of the well-managed multipurpose community improvement and self-help programs. First, the programs use relatively small amounts of monetary resources on a per capita basis. More important, they can tap many potential resources in the form of voluntary service, collective community effort, dedicated leadership and initiatives by community members, and in-kind and cash contribution from communities for their own programs. Second, the interest of the community members in their own self-help activities, the channeling of collective efforts to the most urgent common problems, and the gradual accumulation of resources and experiences for dealing with the community needs ensure high cumulative benefits from the relatively modest resources devoted to these programs. Finally, the attitudes, organizations, experience of collective efforts, and leadership fostered by the community programs create a helpful atmosphere for various other government-supported rural development and education efforts.

With dedicated leadership at the local level, the multipurpose community programs can rarely go wrong, but the overall impact of these programs tends to remain limited and scattered, mainly because of the limitations of the resources that can be generated by local communities themselves and the scarcity of dedicated

leaders who can initiate and guide such programs against formidable odds. Therefore, the important questions to ask about these programs are whether the program activities reflect a realistic appraisal of the opportunities, prospects, and constraints in respect to social and economic changes in the area and concentrate on those needs and problems that offer the best promise of success and whether the program efforts can be linked with and supported by government and other resources and projects originating from outside the community within the framework of a serious national or regional rural development thrust, particularly when the self-help effort in the community seems to reach a threshold of resources and expertise.

*Sarvodaya in Sri Lanka**

The Sarvodaya movement in Sri Lanka started as a self-help program in 1958. Its broad goal of establishing a just social order, free of exploitation, embraces various educational programs for all age groups in society, cooperative projects for community improvement, and activities to promote moral values. The village communities that decide to participate in the program place their members into seven functional and educational groups: infants, children, adolescents, farmers, mothers, elders, and, the culmination of the six, a "village awakening" council representing all the groups. Collective donation of labor, cooperative enterprises, and philanthropic contributions from Sri Lanka and outside have been the main resources for the movement.

Sarvodaya can claim significant achievements in individual villages. At least in one instance a very backward village has been transformed within five years into a progressive community where the people have built their own school, community hall, temple, dispensary, sanitary toilets for every home, wells, an industrial workshop, a burial ground, and a cooperative store. On the whole, however, its development activities have remained confined to a

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*The movement is formally known as the Laka Jatika Sarvodaya Shramadana Sangamaya, which means "National harnessing for the goodness of all and for the awakening and liberation of all in Sri Lanka."

fraction of the rural people in Sri Lanka (less than 2 percent are affected in any manner by Sarvodaya).

The weakness that limits Sarvodaya's impact is that, for various reasons its activities are not related to other rural-development programs and have not become a part of a widely-supported government-backed strategy for rural development.

Women's Movement in Sri Lanka

Another multipurpose community-based program concentrating on women is supported by the Lanka Mahila Samiti (Sri Lanka Women's Association). The aim of the association is to organize women's groups for self-help in respect to health, education, child care, economic improvement, and participation in local institutions. In 1973 there were 2,300 branches of the association throughout the island, with about 200,000 members.

Each of the branch associations, usually formed by women in one village community, undertakes various projects on its own, such as constructing compost pits; promoting the use of boiled water for drinking; improving the village well; organizing literacy, sewing, and crafts classes; advising on kitchen gardens and fruit canning; and encouraging women to take advantage of various services provided by government. The village associations also seek the help of government department staff in the fields of agriculture, education, health, and cottage industries. Some of the associations operate creches to help working mothers.

Most of the funds for the operation of the Samiti activities—about Rs. 280,000 in 1970-71, or less than Rs. 1.50 per member—come from the government as direct grants or as allocations from the Department of Social Services for running the creches. The Samiti budget does not include resources generated locally by the branch associations for their own activities.

Although the associations have been providing significant educational and other services to a sizable number of women—especially by helping women use services that are already available—steps to improve the welfare of women remain circumscribed by the overall limitations of rural society and economy in Sri Lanka. The horizon of the objectives served by the women's associations and the range of services offered profitably by them can be widened further only in the context of a dynamic, broad-based rural development

effort carried out in the country. Without such a dynamic thrust, the success that the women's associations can achieve remains limited in scope and impact.

Mass Media Programs

Educational approaches relying primarily on mass media technology have the potential for cutting educational costs and extending educational opportunities to large audiences mainly through great economies of scale. A recent survey of multimedia approaches to rural education concludes that:

> . . . the distance media—radio, print, television and film— can appeal to, can reach and teach people with little or no formal education living in remote and under-developed villages. They can reach and teach more people more quickly and more cheaply than the slowly expanding army of qualified face-to-face teachers in schools and farmers' institutes. They can enliven and strengthen the efforts of those teachers and extension agents wherever they are already at work.[12]

Experience in a number of nonformal education programs using mass media suggests that the degree to which the potential for the high cost-effectiveness is realized depends on a number of factors.[13] These include:

- Whether the specific educational problem to be solved is amenable to an educational approach relying heavily on mass media technology. There is a tendency to append media and new technologies to educational programs without giving enough consideration to the functions to be served by the media and how the media fit the total program. The media-based approach is clearly more effective in dissemination of information than in teaching skills involving physical dexterity or systematic supervised practice.
- Whether the complementary learning opportunities that may prepare the learners for the media-borne messages or provide

follow-up and reinforcement to media learning are available and coordinated with the media program. A mass media program, by itself, can rarely serve as an educational influence with a sustained impact.

- Whether adequate arrangements exist for identifying, selecting, preparing, testing, and modifying the learning content. Although it is obvious that the effective use of communication media depends on the effectiveness and suitability of the content of education, very often in the planning and implementation of educational programs the hardware of media gets much attention while the problems of choosing, generating, and ensuring continuous and appropriate instructional content are neglected.
- Whether all the logistical problems of launching and operating a media-based program have been examined. In the enthusiasm for shiny gadgets and quick solutions of difficult problems, the complexities of dealing with many essential details—such as creating a field organization for preparing the learners and for feedback, testing the relevance of the messages, operating and maintaining the hardware, training personnel, and so on, are underestimated. By the time all the logistics are adequately provided for, the advantages of the media approach in some situations may not be as great as they appeared at first sight.
- Whether the media program is tied to an overall development effort in the area and whether the program is undertaken in an environment generally conducive to development, permitting utilization of the newly-acquired learning. This condition applies to all educational efforts including those relying on mass media technology.

We will cite three examples of innovative use of the mass media in rural educational efforts in order to illustrate the above points.

Accion Cultural Popular (ACPO)

ACPO provides literacy, basic education, and information and guidance for self-help activities to the rural *campesinos* through nationwide radio broadcasts supplemented by a weekly newspaper and printed booklets. At the heart of the systematic instructional program in basic education (besides general information,

ntertainment, and self-help campaigns) are radio lessons beamed to adio schools—groups of listeners organized under volunteer monitors. The monitors from the village look after the logistics of group essions, including finding a place for the group to meet and proiding feedback to the ACPO headquarters. The monitor is guided nd occasionally visited by ACPO field supervisors.

By 1968 ACPO could list 22,212 radio schools with 167,451 enolled students in the three levels of education (basic literacy, proressive, and primary equivalency courses). It has also built up the ıost powerful radio network and the most popular rural weekly ewspaper in Colombia. Probably even more important, the ACPO pproach has inspired at least two dozen multimedia education rojects in 16 Latin American countries.[14]

arm Radio Forum

The Farm Radio Forum, originally launched by the Canadian roadcasting Corporation for the widely-scattered farmers of anada, spread first to India and more recently to Africa. The riginality of the program lay in the concept that the broadcasts ould be listened to by groups who would then discuss the meang and applicability of the messages for themselves, decide on ›propriate action, and provide useful feedback to the broadcasters.

The radio rural forums in India began experimentally in 1956 ıd became a nationwide program in 1959. It is estimated that in ›65 there were more than 12,700 registered forums in the country. lthough the program still continues, the initial enthusiasm has aned, and it continues to suffer from a perennial problem of inlequate resources and staff. The forums are still an important ed:ational vehicle for farmers where the field organization of the ricultural services is effective.

The first African experiment of rural radio forums began in 1964 Ghana. The Rural Broadcasting Unit (RBU) of Ghana Broadsting Corporation beams special weekly programs for rural lisners, including forum programs providing useful information and couraging rural development and self-help community activities. special supportive pamphlet is prepared for each foru broadcast d sent out to the listening groups in advance. The pamphlets conin, besides the main content, two or three discussion questions

and a report and comment form. The reports are analyzed by the RBU and discussed in subsequent broadcasts. By 1971 there were 324 forums, with an average membership of 25, registered with the RBU.[15]

INADES

An effective combination of correspondence lessons, printed materials, and a variety of face-to-face teaching methods (study groups, seminars, and visits by extension workers) is used by Institut Africain pour le developpement Economique et Social (INADES) in Francophone Africa. The organization, established at a conference of Catholic bishops in these countries, aims to provide general and technical education of a practical nature to the rural people. The main courses offered by INADES are:

1. Agri-service-Afrique: agricultural training divided into four parts for subsistence farmers of all ages, for extension officers, for school teachers, and for adult educators;
2. Cadre-service-Afrique: for rural middle-level workers in, for example, agriculture, industry, commerce, administration, and teaching;
3. Service Feminine: aimed at producing women rural development workers (animatrices rurales).

The printed courses of INADES, produced as a series of booklets, each containing three to four lessons, are its main teaching vehicle. The basic vocabulary in these texts is limited to 600 words, and simple sentence structures are used so that the booklets can be easily translated into vernacular languages. Simple schematized drawings are used liberally. Although the courses are based on printed booklets, illiterates are taught through groups that include literate members. Most groups are based on an existing social unit: a village, a family, or an age-group. As of 1972 about 12,000 peasant farmers are reported to have participated in INADES courses.[16]

The cases cited above use communication media in combination with some form of face-to-face communication, either to reinforce and supplement face-to-face teaching or to enhance the receptivity

of media-borne instruction with the aid of personal contacts. Two of the cases suggest that radio deserves more attention than it has generally received; it remains a versatile and low-cost but grossly underutilized medium. Contrary to common belief, it can be adapted to the needs of specific areas and groups by assigning wavelengths/time slots for a specific audience and by setting up local transmission facilities. With an educational plan that assigns an important role to radio as a medium and that serves different learner groups in a rural region, the capital and maintenance costs of a low-power, medium-wave transmitter could not be considered high, provided the educational goals are largely achieved. Radio can reach illiterates and can help make them literate—a significant advantage in rural areas where 50 percent or more of the population is illiterate.

Both ACPO and INADES, in contrast to the common pattern, have paid special attention to the creation of learning materials by engaging a sizable staff of writers, editors, artists, and by drawing upon the talents of other creative writers and subject experts.

The cases also point to the potential danger of the educational activities continuing in isolation from other development activities in the same rural area and without a clear concept of the ways that the educational process fits the local development needs and prospects. Even in the case of a well-managed and large multimedia program like ACPO, which has inspired many other similar programs in other Latin American countries, it has been said that the program constitutes only an educational infusion in many rural regions of Colombia where the social, economic, and political structure militates against genuine socioeconomic progress. It has been suggested that educational messages of ACPO about the reasons and the ways that people should improve their own condition cannot be very effective without other actions and policies that would enable people to act for their own betterment.[17]

RECAPITULATION

To the extent that education is considered important not for its own sake but as an instrumentality for increased individual and

social welfare, planners and policy makers should be more concerned with the external productivity or the cost-benefit relationship, rather than with the internal efficiency measures of a program (though the latter is related to the former). But it is not a one-to-one relationship: A program may be highly efficient and yet serve no good purpose or a wrong purpose. The internal efficiency measures alone do not tell us about the nature and extent of the benefits.

The benefits, however, cannot be estimated precisely because they are of various kinds: They are economic and noneconomic; they accrue to the learners themselves as well as nonlearners; they accrue continuously and cumulatively over an indefinite period of time; some benefits are circumstantial and incidental, and others are not readily perceived. It is thus extremely difficult to arrive at any definitive estimate of benefit-cost ratio.

What can be attempted and is extremely useful in judging a programs's value, in deciding whether it is achieving its main objectives at a reasonable cost, and in improving the program's performance, is the juxtaposition of the costs against the evidence that can be gathered about achievement of the main stated and predetermined objectives of the program. This juxtaposition can provide a basis for forming a cost-effectiveness judgment about the program. Here, "cost-effectiveness" is defined more broadly than internal efficiency measures, because it is more useful for planners and managers of education to view cost-effectiveness as the relationship between costs and the stated objectives of the program or whatever proxy measures of their attainment are available, rather than as the relationship between costs and the immediate process outputs.

As a planning and management tool, an economic evaluation of educational programs essentially refers to the process of making cost-effectiveness judgment. Indications of cost inputs, evidence of achievement of objectives, identification of the constraints on the proper functioning of a program, and the ways of improving its performance are the main elements of cost-effectiveness judgment.

There are common weaknesses that have hindered the use of this tool for improving the management and performance of programs, according to evidences from selected nonformal program experiences. First, there is inadequate appreciation of the importance and purpose of cost-effectiveness judgment; there is a widespread lack

of "cost-consciousness" among educators. Second, when evaluation is undertaken in a program (not a very common procedure), the focus is very often on the pedagogic process and direct learning output. The important issues of the ways that learning outputs are actually used, and the overall and longer-term feasibility of the program in terms of total resources and total educational needs are frequently overlooked. Third, the educational objectives are often defined in terms of the direct learning process output alone or in vague generalities that make it difficult to relate the inputs to the objectives. A frequent problem is the indadequate conceptualization of the relationship between the learning process output and the ultimate results desired. Fourth, cost inputs are narrowly conceived and underestimated, because only the budgetary items are counted, leaving out the nonmonetary costs, learner's contribution, learner's opportunity costs, and various private costs. Fifth, typically, educational programs fail to trace what happens to their trainees after they complete the program. Thus, the opportunity is lost to find out how effective a program is and what can be done to improve it.

All existing and proposed educational programs can benefit from being subjected to a cost-effectiveness perspective in their planning and management. The case references and the earlier discussion of costs and benefits indicate a number of steps to be followed in applying cost-effectiveness analysis:

1. A conceptualization of the role of the educational program in the particular "development situation," indicating the ways that the direct learning outputs can help to achieve the ultimate educational objectives. The educational objectives also need to be spelled out in a way that makes it possible to show a relationship with the direct learning outputs and the inputs for the program.
2. A broader view of resources and costs needs to be taken to show the true magnitudes of costs, including financial, nonmonetary, and opportunity costs.
3. All cost-reducing possibilities should be considered, including alternative educational approaches that can be applied to achieve substantially the same objectives.
4. All factors that are exogenous to the program itself but may

affect the attainment of the objectives or the efficient use of the inputs should be considered, and the possibilities of appropriate program modifications should be examined.

5. The logistics of operating a program—preparing the right educational content and materials, devising appropriate instructional methodologies, training and using the personnel, adjusting the program to changing needs, and so on—have to be carefully examined for cost implications in each situation, because theoretically sound programs can bog down in many unforeseen practical problems, particularly in the case of rural clienteles.
6. Who pays for the educational program and who derives the benefits are important considerations, particularly in programs designed to serve neglected and deprived segments of population. It will not be readily apparent who bears the "incidence" of the cost burden, if the source and method of obtaining financial and other resources are not examined.
7. A system needs to be developed to identify and collect necessary evaluation data on a regular basis, but the time-consuming collection of a mass of unusable data should be avoided. An important part of this data-gathering process would be some simple but vital information about the former clientele of the program.
8. All programs need to be looked at from the point of view of their viability and feasibility on a long-term basis and with a view to the broader educational needs of the population.
9. All programs can very profitably engage in periodic self-evaluation exercises aimed at examining the flow and use of resource inputs, the learning outputs achieved, and the educational objectives served, with the participation of teachers, learners, community members, and probably one or two objective and knowledgeable outsiders.

NOTES

1. See Manzoor Ahmed, *The Mobile Trade Training Schools in Thailand*, case study no. 6 (Essex, Conn.: ICED, April 1972).

2. Alton Straughton and James Murray, "An Evaluation of the Mobile Trade Training School Project" (Bangkok: USOM/Thailand, April 1971), cited in Ahmed, *Mobile trade Training Schools in Thailand*, p. 20.

3. Philip H. Coombs and Jacques Hallak, *Managing Educational Costs* (New York: Oxford University Press, 1972), pp. 82-84.

4. Coombs and Hallak, *Managing Educational Costs*, p. 82. There is, however, semantic disagreement about the terminologies. Another writer, for instance, defines cost-effectiveness as the relationship between monetary costs to nonmonetary benefits and objectives of the educational program. Cost-benefit analysis, for this writer, is the comparison of monetary benefits and monetary costs, and is, therefore, of narrower scope than cost-effectiveness analysis. See Manuel Zymelman, *Financing and Efficiency in Education*, prepared for the AID (1973), pp. 187, 197.

5. The materials about the programs mentioned have been drawn from the international studies of nonformal education conducted by ICED; see Philip H. Coombs and Manzoor Ahmed, *Attacking Rural Poverty—How Nonformal Education Can Help* (Baltimore, Md.: Johns Hopkins University Press, 1974), and Philip H. Coombs, Roy C. Prosser, and Manzoor Ahmed, *New Paths to Learning for Rural Children and Youth* (New York: ICED, 1973).

6. For example, from an examination of 13 Latin American extension services, E. B. Rice concluded that by and large these services had contributed insignificantly to increasing production, though they may have produced such benefits as providing a training ground for agricultural staff, improving the image of the government in the eyes of rural people, and possibly creating elements of an infrastructure for future agricultural services. E. B. Rice, *Extension in the Andes, An Evaluation of Official U.S. Assistance to Agricultural Extension Services in Central and South America*, AID evaluation paper no. 3 (Washington, D.C.: April 1971).

7. Manzoor Ahmed, *Farmer Education Program of the Office of Rural Development in the Republic of Korea*, case study no. 5 (Essex, Conn.: ICED, July 1972).

8. Manzoor Ahmed and Philip H. Coombs, *PACCA: Education in an Integrated Agricultural Program*, case study no. 10 (Essex, Conn.: ICED, June 1972).

9. Manzoor Ahmed and Philip H. Coombs, *Training Extension Leaders at the International Rice Research Institute,* case study no. 12 (Essex, Conn.: ICED, June 1972).

10. The so-called traditional literacy courses are designed to teach reading, writing, and simple arithmetic for the purpose of permitting the learner access to written and printed words—with the assumption that the learner will find use for literacy in his life. Because this assumption has not proved to be always correct and because one who does not see literacy as immediately useful is an unmotivated learner, the functional literacy programs have come into being. These programs are designed as components of economic and social-development projects—literacy is taught in course of providing occupational and other knowledge related to the development projects. Literacy is intended to become a functional tool for spreading new knowledge. See UNESCO, *Functional Literacy, Why and How* (Paris, 1970).

11. John L. Simmons, "Towards an Evaluation of Literacy and Adult Education in a Developing Country—A Pilot Study," mimeographed (Harvard University, Department of Economics and Graduate School of Education, 1970).

12. Tony Dodds, "Multi-media Approaches to Rural Education" (Cambridge, Eng.: International Extension College, 1972), p. 42.

13. For a discussion of educational technology, see Coombs and Ahmed, *Attacking Rural Poverty,* Ch. 10, "Improving the Technologies of Nonformal Education."

14. Stephan S. Brumberg, *Accion Cultural Popular: Mass Media in the Service of Colombian Rural Development,* case study no. 1 (Essex, Conn.: ICED, 1972); also Emile G. McAnany, "Radio's Role in Development: Five Strategies of Use" (Washington, D.C.: Academy for Educational Development, 1973).

15. Dodds, "Multi-Media Approaches," pp. 11-15.

16. *Ibid.,* pp. 20-25.

17. See McAnany, *Radio's Role in Development;* Brumberg, *Accion Cultural Popular.*

CHAPTER

6

THE USES OF ECONOMIC ANALYSIS

In concluding this discussion of the economic aspects of nonformal education, it may be helpful to draw together the strands of argument and evidence presented in the previous chapters, focusing our attention on the question: What are the uses of economic analysis in planning and managing nonformal education?

LIMITATIONS OF ECONOMIC ANALYSIS

It is evident from the preceding chapters that economic analysis does not and cannot provide final answers about the advisability of investing in a particular educational program, the resources that should be allocated for the educational system, or the ways that educational resources should be divided among different programs, regions, or clienteles. These normative questions can be answered only through the political and administrative processes set up by each society to formulate these answers. Economic analysis can be helpful in making more informed decisions to the extent that such analysis can provide information about aspects of the existing situation and some of the consequences of future courses of action. But these economic considerations vie with

numerous other factors—moral, ethical, psychological, sociological, historical, and political—to influence decisions, and the final result is always the compromise perceived as most acceptable by the decision makers. In fact, the analysis of economic aspects can be most useful and relevant when the basic parameters, such as educational objectives, clienteles, the nature of content, and other "given" factors derived from the socioeconomic context, are well defined, as explained in Chapter 2.

It is necessary to be cautious, however, even regarding what is considered to be the forte of economic analysis: determining the effectiveness and benefits of existing educational activities and predicting the future consequences of educational decisions. The type of economic analysis of education—variants of cost-benefit studies that purport to measure returns on investments in education—that has flourished during the past decade among academics, but has found few practical applications in planning and managing education, has created false expectations about the use of economic analysis in educational decision making. As our discussion of costs and benefits shows, any claim to precision in measurement of economic returns to education is bound to reflect a gross underestimation of the difficulties of measurement and quantification of educational inputs and outputs. But a more serious problem with standard economic analysis, represented by cost-benefit ratios and rate-of-return studies, is that it is based on an assumption of the centrality of the price mechanism in economic phenomena—an assumption that bears little relation to the real world, particularly to the developing world. John Vaizey succinctly summarizes the problem:

> . . . the boom in the economics of education which has taken place in the last ten years or so has been largely misguided since it has been based upon a form of economics which in itself is of dubious intellectual calibre, and which is rapidly being abandoned. The reason for this is that it rests upon the assumption that there are limited resources which are best allocated by some form of price mechanism, that to each of the major factors in production, notably labour and capital, there is a return, that the optimum allocation of resources is achieved when the marginal

> rate of return to be derived from an additional input of either labour or capital is equal, and that the purpose of policy must be to create conditions in which something analogous to the price system is functioning, whether or not the price system as such actually does function in a normal free market *laisser-faire* sense. The fundamental conception which has explained income differentials has been the notion of human capital, that is to say each person is viewed as a walking talking machine to whom returns are paid in exactly the same way as in a capitalist society they are paid to the owners of physical machines. My colleagues and I have argued, with growing support, that this view of the functioning of the economy is incorrect in itself, since it leaves unexplained the notion of capital and it gives an inconclusive answer to the question as to what determines prices in the absence of an independently set rate of profit. This debate, which is as old as the science of political economy itself, remains in our view unresolved because the questions are themselves inherently not resolvable, since they are concerned with the opposition of particular interests.[1]

Apart from the difficulties with the notion of the economic system, societies are interested in making educational programs serve social and individual goals determined by social policies and not necessarily in achieving equality of marginal costs and marginal returns, even if these could be measured and if educational services could be turned off and on like a faucet when this point of equality is reached in each program.

There may be a temptation in many situations to concentrate on the internal efficiency of an educational program—the relationship between costs and the immediate learning outputs in the form of numbers of learners completing a course of study, scores obtained in a test, or some other proxy measure—only because internal efficiency is a more manageable evaluation exercise than overall cost-effectiveness. Assessment of internal efficiency is an essential step toward forming cost-effectiveness judgments and, even by itself, would be a great improvement on what happens now in respect to economic evaluation in far too many nonformal

education programs. But for reasons explained in Chapter 5, assessment of internal efficiency alone does not provide a cost-effectiveness judgment and cannot constitute a basis for educational decisions.

FUNCTIONS OF ECONOMIC ANALYSIS

The most important use of economic analysis, seen as the attempt to relate total (monetary and nonmonetary) resource costs incurred and the intended benefits derived in an educational program, lies in mobilizing greater resources for education by identifying potential and untapped resources and by finding new and more efficient uses of existing resources; identifying and applying all cost-reducing possibilities that do not entail a net sacrifice in educational results; ensuring the flow of appropriate inputs in the right combination and balance as required in the learning process to achieve the educational results efficiently; testing the long-term feasibility of educational programs in relation to the potential clientele and overall resource availability; and keeping the educational process squarely focused on the objectives and intended benefits of the program. The functions that economic analysis can serve relate to resource mobilization, internal efficiency, and external productivity. Pertinent information about these aspects of the economics of a program or a national system would enter into the educational decision-making process along with *a priori* determining influences of the overall socioeconomic context—the "social parameters" (see Chapter 2).

It is possible that some programs may be so grossly faulted on economic grounds alone that there is no reason for applying to them other noneconomic criteria of evaluation. A program may be totally unfeasible because the inputs needed for operating it on any sizable scale are simply not available, the learning results may be far too inadequate compared to the resources applied, or the results may be totally irrelevant to the objectives of the program. Obviously, such a program would have extremely low cost-effectiveness. But the faults of such a program would be so obvious that it would hardly take economic analysis to detect the problems.

The practical operational problems faced by educational decision makers rarely call for choices between extremes. If they did, the decisions would be easy to reach. Most existing educational programs have come into being and grown through a confluence of different social, political, pedagogic, and economic forces and are justifiable on more than one ground. At the same time there is margin for improving the internal efficiency and external productivity in most programs. Moreover, it rarely makes sense, economically or otherwise, to scrap an ongoing program or institution completely and start afresh, rather than to attempt to transform or build on what already exists.

There is more room for maneuver when a large-scale expansion of education is envisaged or new kinds of educational programs with new groups of clienteles and new sets of educational objectives are planned. There is a greater opportunity in these situations to weigh novel alternatives in respect to the educational "production function." But again, the range of alternatives worth considering would be limited by the "social parameters."

In either of these situations—improving the performance of existing programs or launching new programs—economic analysis within a cost-effectiveness framework should be an essential ingredient for sound decisions. In either case, it is not so much the precision of quantification—though every effort should be made to be accurate in quantifying what can be quantified and to note the effects of what cannot be quantified—that contributes most to better decisions as the assiduous application of cost-effectiveness logic.

The following conclusion was reached in an international study of nonformal education:

> What is basically important in attempting to examine any nonformal education program in its socio-economic context is to *think of the relationships between resource costs incurred and results attained,* including both immediate and longer-term results, and both economic and noneconomic benefits. While these can never be fully or precisely measured or even fully defined and identified, it is generally possible, by asking the right questions, to obtain enough relevant indicative evidence to form reasonable judgments.[2]

TWO HELPFUL STEPS

As noted earlier, economic analysis can be meaningful and relevant only within the framework of the social policies, preferences, and objectives that determine the parameters for economic analysis. But often the premises preceding educational decisions and economic questions are not clear and need interpretation, clarification, and reformulation before they can be useful in decision making. Moreover, no educational program begins in a complete vacuum. The questions are always: Where do we go from *here*? Which alternative courses of action can be taken on the basis of what is already there? How can we take advantage of the assets already in hand, and how can we live with or work around the constraints that exist? In preparing the grounds for the application of cost-effectiveness analysis as a tool for better planning and management decisions in education and in order to get good results from such application, two kinds of actions can be taken: a sizing-up exercise and a sample cost-effectiveness analysis.

From the point of view of making the national or regional learning system as a whole more effective and of improving the performance of individual programs a general sizing up of the educational situation will be extremely useful. The purpose of such a stock-taking exercise would be to collect essential base-line information concerning the important socioeconomic factors that impinge on educational decisions, as well as concerning the assets and constraints of the existing learning system.[3]

The stock taking, to begin with, need not be a lengthy and expensive undertaking. It can be a short, intensive enquiry designed to get quick answers (estimates and judgments when precise data are not available) to the following questions:

1. What is the scale and character of the important educational needs that must be met within the next decade? This will involve the collection of basic demographic data, an effort to determine the "minimum essential learning needs" in the particular socioeconomic context, and an examination of the range of technological and pedagogical choices in meeting these needs.

2. What educational provisions already exist for meeting these essential learning needs, and what part of the total task are they now accomplishing? This will mean preparing a quick inventory and rough appraisal of all three modes of learning: formal, nonformal, and informal.
3. What arrangements exist for improving the coordination of various education programs and activities, and how effective are they? The answer to this question should indicate the extent to which the educational efforts form a cohesive pattern designed to serve the learning needs of society and the success of individual programs in fitting this pattern, enhancing their own performance as well as that of the system.
4. What resources are being used, and what potential resources—national, local, and external—might be mobilized in the future to undergird a large expansion of learning opportunities? This question should cover financial and nonmonetary, as well as public, private, and community resources. The aim would be not a financial projection but a checklist of types and an estimate of magnitudes.
5. What particularly promising specific opportunities warrant consideration for priority action? The answer would depend on the social priorities and the opportunities presented by existing educational programs and resources.

The enquiry suggested above—or at least the first run of it, which can later be refined and supplemented—could be completed within six months by a small full-time task force, provided the cooperation of concerned government and nongovernment agencies is forthcoming.

This sizing-up exercise, ideally, can set the stage for the second category of action: applying cost-effectiveness analysis, as suggested in Chapter 5, on a trial basis to sample nonformal programs. This effort would enrich the sparse body of knowledge on the cost-effectiveness of nonformal education, would help to build and refine methodological steps and guides for economic evaluation of different kinds of nonformal programs, would point out the difficulties in applying the suggested approach in various situations, would provide useful experience to a group of people

in the economic analysis of nonformal education, and would contribute toward improving the performance of the programs.

Only by applying the cost-effectiveness tool to programs, by acquiring some experience with it in different situations and by refining it progressively, can its usefulness in the tasks of planning and managing education be realized.

NOTES

1. John Vaizey, "The Implications of the IEA Studies for Educational Planning with Respect to Organisation and Resource," presented at Conference on Educational Achievement, Harvard University, November 1973. In Vaizey's opinion the distribution of incomes, a central element in rate-of-return studies, is "fundamentally determined outside the economic system," and he suggests that the important question in education is not whether a particular course of action is more efficient than another; it is: "What is the relevance of the education system to the good life?"

2. Philip H. Coombs and Manzoor Ahmed, *Attacking Rural Poverty—How Nonformal Education Can Help* (Baltimore, Md.: Johns Hopkins University Press, 1974), p. 203.

3. For elaboration, see Philip H. Coombs, Roy C. Prosser, and Manzoor Ahmed, *New Paths to Learning for Rural Children and Youth* (New York: ICED, 1973), Ch. 6. A similar broadly based assessment of the educational situation is advocated by Harbison as essential for the development of nationwide learning systems. Frederick H. Harbison, *Education Sector Planning for Development of Nation-wide Learning Systems*, OLC paper no. 2 (Washington, D.C.: Overseas Liaison Committee of the American Council on Education, November 1973).

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