Education and Development

The school in many underdeveloped countries is a reflection and a fruit of the surrounding underdevelopment, from which arises its deficiency, its quantitative and qualitative poverty. But little by little, and there lies the really serious risk, the school in these underdeveloped countries risks becoming in turn a factor of underdevelopment.

Joseph Kizerbo, Former Minister of Education, Burkina Faso

Virtually every serious commentator agrees that major reform within Third World education is long overdue,

Richard Jolly, Deputy Director General, UNICEF

Investing in people, if done right, . . . provides the firmest foundation for lasting development.

World Bank, W*orld Devetopment Report, 1991*

Education and Human Resources

Most economists would probably agree that it is the human resources of a nation, not its capital or its natural resources, that ultimately determine the character and pace of its economic and social development. For example, according to the late Professor Frederick Harbison of Princeton University:

> Human resources . . . constitute the ultimate basis for the wealth of nations. Capital and natural resources are passive factors of production; human beings are the active agents who accumulate capital, exploit natural resources, build social, economic and political organizations, and carry forward national development. Clearly, a country which is unable to develop, the skills and knowledge of its people and to utilize them

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> effectively in the national economy will be unable to develop anything else.[1]

The principal institutional mechanism for developing human skills and knowledge is the formal educational system. Most Third World nations have been led to believe or have wanted to believe that the rapid *quantitative* expansion of educational opportunities is the key to national development: The more education, the more rapid the development. All countries have committed themselves therefore, to the goal of universal education in the shortest possible time. This quest has become a politically sensitive, but often economically costly, sacred cow. Until recently, few politicians, statesmen, economists, or educational planners inside or outside of the Third World would have dared publicly to challenge the cult of formal education.

Nevertheless, the challenge is now gathering momentum, and it comes from many sources. It can be found most clearly in the character and results of the development process itself. After more than three decades of rapidly expanding enrollments and hundreds of billions of dollars of educational expenditure, the plight of the average citizen in many parts of Asia, Africa, and Latin America seems little improved. Absolute poverty is chronic and pervasive. Economic disparities between rich and poor widen with each passing year. Unemployment and underemployment have reached staggering proportions, with the "educated" increasingly swelling the ranks of the unemployed.

It would be foolish and naive to blame these problems on the failures of the formal educational system. At the same time, we must recognize that many of the early claims made on behalf of the unfettered quantitative expansion of educational opportunities—that it would accelerate economic growth, that it would raise levels of living especially for the poor, that it would generate widespread and equal employment opportunities for all, that it would acculturate diverse ethnic or tribal groups, and that it would encourage "modern" attitudes—have been shown to be greatly exaggerated and, in many instances, simply false.

As a result, there has been a growing awareness in many developing nations that the expansion of formal schooling is not always to be equated with the spread of learning, that the acquisition of school certificates and higher degrees is not necessarily associated with an improved ability to undertake productive work, that education oriented almost, entirely toward preparation for work in the modern urban sector can greatly distort student aspirations, and that too much investment in formal schooling, especially at the secondary and higher levels, can divert scarce resources from more socially productive activities (e.g., direct employment creation)

and thus be a drag on national development rather than a stimulus.

The educational systems of Third World nations strongly influence and are influenced by the whole nature, magnitude, and character of their development process. The role of formal education is not limited to imparting the knowledge and skills that enable individuals to function as economic change agents in their societies. Formal education also imparts values, ideas, attitudes, and aspirations,

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which may or may not be in the nation's best developmental interests. Education absorbs the greatest share of LDC recurrent government expenditures, occupies the time and activities of the greatest number of adults and children (almost 30% of Third World populations), and carries the greatest psychological burden of development aspirations. We must therefore examine its fundamental economic basis in developing countries and also its social and institutional ramifications.

The economics of education is a vital yet somewhat amorphous component of the economics of development. It is a young subject, having emerged as a separate branch of economics only in the early 1960s. Yet when we recognize the principal motivation or demand for education in Third World countries as a desire for economic improvement by means of access to better-paid jobs, we must understand the economic processes through which such aspirations are either realized or frustrated.

In this chapter, we explore the relationship between development and quantitative and qualitative educational expansion in terms of six basic issues that grow directly out of the discussions of previous chapters:

1. How does education influence the rate, structure, and character of economic growth? Conversely, how do the rate, structure, and character of economic growth influence the nature of the educational system?
2. Does education in general and the structure of Third World educational systems in particular contribute to or retard the growth of domestic inequality and poverty?
3. What is the relationship of education to rural-urban migration and urban unemployment? Are rising levels of the educated unemployed a temporary or chronic phenomenon?
4. Do women lag behind men in educational attainment, and is there a relationship between the education of women and their desired family size?
5. Do contemporary Third World formal educational systems tend to promote or retard agricultural and rural development?
6. What is the relationship, if any, among Third World educational systems, developed-country educational systems, and the international migration of highly educated professional and technical workers from the less developed to the more developed nations?

We begin with a profile of the status of education in a range of Third World countries. In this profile, we focus on public expenditure levels, enrollment ratios, literacy levels, dropout rates, educational costs and earnings differentials, and the educational gender gap. Then we will review some basic concepts in the economics of education, including the determinants of the demand for and supply of school places and the distinction between private and social benefits and costs of investment in education. Next we examine in detail the six listed issues to see if we can reach any conclusions about the relationship between education and various key components of the development process. We end

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with a review of alternative policy options open to Third World government in their attempts to evolve an educational system that will more efficiently serv the needs and aspirations of all their people.

Education in Developing Regions

Public Educational Expenditure

In many developing countries, formal education is the largest "industry" and the greatest consumer of public revenues[3]. Poor nations have invested huge sums of money in education. The reasons are numerous. Literate farmers with at least a primary education are thought to be more productive and more responsive to new agricultural technologies than illiterate farmers. Specially trained artisans and mechanics who can read and write are assumed to be better able to keep up to date with changing products and materials. Secondary school graduates with some knowledge of arithmetic and clerical skills are needed to perform technical and administrative functions in growing public and private bureaucracies. In former colonial countries, many people with such skills are also needed to replace departing expatriates. University graduates with advanced training are needed to provide the professional and managerial expertise necessary for a modernized public and private

sector.

In addition to these obvious **manpower planning** needs, the people themselves, both rich and poor, have exerted tremendous political pressure for the expansion of school places in developing countries. Parents have realized that in an era of scarce skilled manpower, the more schooling and the more certificates their children can accumulate, the better will be their chances of getting secure and well-paid jobs. More years of schooling have been perceived as the only avenue of hope for poor children to escape from poverty. As a result of these forces acting on both demand and supply, there has been a tremendous acceleration in LDC public expenditures on education during the past three decade?. The proportion of national income and of national budgets spent on education has increased rapidly. In Asia, total public expenditures tripled during the 1960s and 1970s; in Africa and Latin America, public educational expenditures more than doubled. In fact, the increase in public expenditure on education in the 1960s and 1970s exceeded increases in any other sector of the economy. By the end of the 1980s, educational budgets in many Third World nations were absorbing 15% to 27% of total government recurrent expenditure. Although this is a sizable expenditure in terms of overall budget, developing nations nevertheless were spending only $229 per capita on public education, compared to $468 per capita spent in the developed world. Moreover, with declining or stagnating economic growth combined with rising debt repayment burdens, most Third World governments—primarily the least developed countries of Africa and Asia—were forced in the 1980s and early 1990s to curtail their educational (as well as health and social services) budget.

Enrollments

Between 1960 and 1990, the total number of persons enrolled in the three main levels of education in Africa, Asia, the Middle East, and Latin America rose from 163 million to 440 million—an average annual increase of 5%. Although the largest part of this increase has been in primary education, it is in the secondary and tertiary levels that the greatest proportionate increases have occurred—12.7% and 14.5% per annum, respectively. Nevertheless, primary enrollment still accounts for nearly 78% of the total LDC school enrollments.

In terms of the proportion of children of school age actually attending school at the primary, secondary, and tertiary levels, the differential between the developed and the less developed regions and among Third World regions themselves is substantial. African countries lag behind at all levels, with only 67% of their primary school-aged children actually enrolled. Table 11.1 shows comparative . data on **enrollment** ratios at the primary, secondary, and higher education levels for a selected group of low- and middle-income developing countries in 1965 and 1989. The remarkable increases in enrollments at both the primary and secondary levels are strikingly evident from this table.

Table 11.1 Enrollment Ratios in Selected Developing Countries: Primary, Secondary, and Higher Education, 1965 and 1989

	Numbers Enrolled as a Percentage of Age Group					
	PRIMARY		SECONDARY		TERTIARY	
	1965	1989	1965	1989	1965	1989
Low-Income LDCs						
Bangladesh	49	70	13	17	1	4
Ethiopia	11	38	2	15	0	1
Haiti	50	84	5	19	0	1
India	74	98	27	43	5	6
Sri Lanka	93	100	35	74	2	4
Tanzania	32	63	2	4	0	1
Middle-Income LDCs						
Colombia	84	100	17	52	3	14
Guatemala	50	79	8	21	2	9
Mexico	92	100	17	53	4	15
Philippines	100	100	41	73	19	28
South Korea	100	100	35	86	6	38
Thailand	78	86	14	28	2	16
Developed Countries	100	100	61	75	21	42

SOURCE; United Nations Development Program, *World Development Report. 1992* (New York: Oxford University Press, 1992), annex tab. 29.

The statistics of Table 11.1, however, can be very misleading. They tell us the proportion of school-age children and teenagers enrolled in primary, secondary, and higher educational institutions at a single point in time. They do not tell us how many of these students remain in school for the duration. In fact, one of the major educational problems of developing nations is the high percentage of students who drop out before completing a particular cycle. For example, in Latin America, an estimated 60 out of every 100 students who enter primary school drop out before completion. In some Latin American countries, the primary school **dropout** rate is as high as 75%. In Africa and Asia, the median dropout rate is approximately 54% and 20%, respectively. But the variation among countries has been wide, with dropout rates as high as 81% in certain African nations and 64% in certain Asian ones.

At the secondary level, median dropout rates for entering students in 1975 were 38.7% in Africa and 18% in Latin America and Asia. In Europe, the rate was approximately 11.4%. One consequence of this phenomenon, particularly for Africa, is the serious and growing problem of the secondary school dropout who joins the ranks of the educated unemployed.

Literacy

The percentage of LDC adults (persons 15 years of age and older) who are illiterate has fallen from 60% in 1960 to 36% in 1990. However, as a result of rapid population growth, the actual number of adult illiterates has risen over this same period by nearly 120 million to an estimated total of over 940 million in 1990. The highest illiteracy rates are found in Africa (50%) and the Arab states (47%), followed by Asia (40%) and Latin America (16%). In North America and Europe, illiteracy rates are a mere 1.0% and 2.5%, respectively.

Costs and Earnings

There has been growing criticism in recent years of the very serious disproportionate per-pupil costs of education at various levels in the LDCs. The imbalance is particularly apparent when we compare secondary and higher educational costs with primary-level costs. Whereas much of the early criticism was based on scattered ad hoc empirical and interpretative information, in the 1970s and 1980s a highly regarded comparative series of studies provided detailed data on the magnitude of these cost divergences. [4]

Table 11.2 compares the ratio of total costs per student year by educational level for a group of developed and less developed countries. Although these data are from the 1960s, similar ratios still prevail today. The data reveal that whereas in the three developed countries shown the ratio of total per-pupil cost of secondary to primary education is 6.6 to 1 and that of higher to primary education is 17.6 to 1, in the seven LDCs shown these relative costs are 11.9 and 87.9 to 1, respectively. In other words, taking the 87.9 figure, for the equivalent cost of educating one university student for a year, 88 primary school children could have received a year of schooling. In many African countries (Sierra Leone, Malawi, Kenya, Tanzania), cost ratios per pupil between higher

Table 11.2 Ratios of Total Costs by Educational Level per Student Year

Groups of Countries	Relative Cost	
	SECONDARY PRIMARY	HIGHER PRIMARY
United States, Great Britain, New Zealand	6.6	17.6
Malaysia, Ghana, South Korea, Kenya, Uganda, Nigeria, India	11.9	87.9

SOURCE: George Psacharopoulos, *The Return to Education: An International Comparison* (Amsterdam: Elsevier, 1972), tab. 8.2.

and primary education range as high as 283 to 1. Since in over half of the world's developing countries the ratio of students in primary schools to students in higher education is above 100 to 1 (compared, for example, with ratios of less than 10 to 1 in the developed countries), it follows that LDCs spend large proportions of their educational budgets on a very small proportion of their students enrolled in universities and professional schools. For example, a 1985 study of the distribution of public educational expenditures revealed that in developing countries as a whole, the 6% of students attaining higher education received almost 40% of the resources. In Africa, less than 2% of the students who go to universities received over 35% of the public expenditures. In Latin America, 12% of students received 42% of the educational resources.[5]

If we then compare the data in Table 11.3, showing the relative average earnings of individuals by educational level, with those on costs, it becomes clear that relative earnings differentials by educational level are much less than unit cost differentials in the developing compared with the developed countries. For example, looking at the figures at the lower right in Tables 11.2 and 11.3, we see that whereas an LDC university student costs 87.9 times as much as a primary pupil to educate for one year, the university student on the average earns only 6.4 times as much as the typical primary pupil—a very high (and often artificial) differential, but not as high as the cost differential. To the extent

Table 11.3 Ratios of Average Annual Earnings of Labor by Educational Level

Groups of Countries	Relative Earnings	
	SECONDARY PRIMARY	HIGHER PRIMARY
United States, Canada, Great Britain	1.4	2.4
Malaysia, Ghana, South Korea, Kenya, Uganda, Nigeria, India	2.4	6.4

SOURCE: George Psacharopoulos, *The Return to Education: An International Comparison* (Amsterdam: Elsevier, 1972), tab. 8.4.

Table 11.4 The Rates of Return to Investment in Education by Level of Education, Country Type, and Region (percent)

Country Type and Region	Social Rate of Return[a]			Private Rate of Return[a]		
	PRIMARY	SECONDARY	HIGHER	PRIMARY	SECONDARY	HIGHER
Developing						
Africa	26	17	13	45	26	32
Asia	27	15	13	31	15	18
Latin America	26	18	16	32	23	23
Developed	—[b]	11	9	—[b]	12	12

SOURCE: George Psacharopoulous, "Education and development: A review," *World Bank Research Observer* 3 (January 1988), tab. 1.

[a] See note 6 in the text for a description of how these rates of return are calculated.

[b] Not available because of lack of a control group (people with no schooling).

that average relative earnings reflect average relative productivity, the wide disparity between relative earnings and relative costs of higher versus primary education implies that in the past, LDC governments may have unwisely invested too much in higher education. These funds might have been more productively invested in primary school expansion. This does not necessarily imply that future relative cost-benefit ratios will continue to favor primary school expansion; much depends on the relative employment prospects of the various educational groups. Moreover, although most empirical studies in the 1970s and 1980s revealed that both the private and the social rates of return to investment in education were the highest at the primary level regardless of the number of students (see Table 11.4)[6] research by Behrman and Birdsall casts considerable doubt on this widely held belief.[7] Their studies indicate that it is the quality of education (the quality of teaching, facilities, and curricula) and not its quantity alone (years of schooling) that best explains differential earnings and productivity. The implication is that governments should spend more to upgrade existing schools and less to expand the number of school

places—that is, they should deepen the investment in human capital rather than extend it to more people. Unfortunately, this raises serious equity questions, which we will examine shortly.

The Gender Gap: Women and Education

Young females receive considerably less education than young males in almost every developing country. In 66 out of 108 countries, women's enrollment in primary and secondary education is lower than that of men by at least 10 percentage points. This **educational gender gap** is the greatest in the poorest countries and regionally in the Middle East and North Africa. Table 11.5 provides data

Table 11.5 Educational Gender Gap: Females as a Percentage of Males, 1989-1990

Country	Adult Literacy	Mean Years of Schooling	Primary Enrollment	Secondary Enrollment	Tertiary Enrollment
Afghanistan	32	12	52	45	24
Algeria	65	18	85	77	44
Bangladesh	47	30	85	48	20
Egypt	54	42	79	78	52
India	55	34	97	56	45
Mexico	95	96	97	100	75
Morocco	62	36	69	71	58
Nigeria	63	26	93	73	39
South Korea	94	61	100	96	49
Sudan	27	45	71	74	66
All LDCs	69	54	93	73	53

SOURCE: United Nations Development Program, *Human Development Report, 1992* (New York: Oxford University Press, 1992), tab. 9.
NOTE: All figures are expressed in relation to the male average, which is indexed to equal 100. The smaller the figure, the bigger the gap.

on female-male gaps in literacy, mean years of schooling, and enrollments for 10 Third World countries in 1989-1990. For all developing countries taken together, the female literacy rate was 31% lower than male literacy, women's mean years of schooling were 46% lower than men's and females' enrollment rates in primary, secondary, and tertiary schools were 7%, 27% and 47% lower, respectively, than the corresponding male rate.

Why is female education important? Is it simply a matter of equity? The answer is that there now exists ample empirical evidence that educational discrimination against women binders economic development in addition to reinforcing social inequality. Closing the educational gender gap by expanding educational opportunities for women is economically desirable for four reasons':

1. The rate of 'return on women's education is higher than that on men's in most developing countries.
2. Increasing women's education not only increases their productivity on the farm and in the factory but also results in greater labor force participation, later marriage, lower fertility, and greatly improved child health and nutrition.
3. Improved child health and nutrition and more educated mothers lead to multiplier effects on the quality of a nation's human resources for many generations to come.
4. Because women carry a disproportionate burden of the poverty and landlessness that permeates developing societies, any significant improvements in their role and status via education can have an important impact on breaking the vicious cycle of poverty and inadequate schooling.

The Economics of Education and Employment

Much of the literature and public discussion about education and economic development in general, and

education and employment in particular, revolves around two fundamental economic processes: (1) the interaction between economically motivated demands and politically responsive supplies in determining how many school places are provided, who gets access to these places, and what kind of instruction they receive; and (2) the important distinction between social and private benefits and costs of different levels of education and the implications of these differentials for educational investment strategy.

Educational Supply and Demand: The Relationship between Employment Opportunities and Educational Demands

The amount of schooling received by an individual, although affected by many nonmarket factors, can be regarded as largely determined by demand and supply, like any other commodity or serviced However, because most education is publicly provided in less developed countries, the determinants of demand turn out to be much more important than the determinants of supply. On the demand side, the two principal influences on the amount of schooling desired are (1) a more educated student's prospects of earning considerably more income through future modern-sector employment (the family's private benefits of education) and (2) the educational costs, both direct and indirect, that a student or family must bear. The demand for education is thus in reality a derived demand for high-wage employment opportunities in the modern sector. This is because access to such jobs is largely determined by an individual's education. Most people (especially the poor) in less developed nations do not demand education for its intrinsic noneconomic benefits but simply because it is the only means of securing modern-sector employment. These derived benefits must in turn be weighed against the costs of education.

On the supply side, the quantity of school places at the primary, secondary, and university levels is determined largely by political processes, often unrelated to economic criteria. Given mounting political pressure throughout the Third World for greater numbers of school places, we can for convenience assume that the public supply of these places is fixed by the level of government educational expenditures. These are in turn influenced by the level of aggregate private demand for education.

Because it is the demand for education that largely determines the supply (within the limits of government financial feasibility), let us look more closely at the economic (employment-oriented) determinants of this derived demand.

The demand for an education sufficient to qualify an individual for modern sector jobs appears to be related to or determined by the combined influence of the following four variables:

1. The wage or income differential. This is the wage differential between jobs in the modern sector and those outside it (family farming, rural and urban

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self-employment, etc.), which for simplicity we can call the traditional sector. Entry into modern-sector jobs depends initially on the level of completed education, whereas income-earning opportunities in the traditional sector have no fixed educational requirements. The greater the income differential between the modern and traditional sectors, the greater the demand for education. Thus, our first relationship states that the demand for education is positively related to the modern sector-traditional sector wage differential. Since we know from empirical studies that these differentials can be considerable in developing nations, we might expect the demand for education to be relatively high.

2. The probability of success in finding modern-sector employment. An individual who successfully completes the necessary schooling for entry into the modern-sector labor market has a higher probability of getting that well-paid urban job than someone who does not. Clearly, if urban unemployment rates among the educated are growing or if the supply of secondary school graduates continually exceeds the number of new job openings for which a secondary graduate can qualify, we need to modify the actual wage differential and instead speak once again about an *expected* income differential (see Chapter 8). As the probability of success is inversely related to the unemployment rate, we can argue that the demand for education through the secondary level will be inversely related to the current unemployment rate among secondary school graduates.[10]
3. The direct private costs of education. We refer here to the current out-of pocket expenses of financing a child's education. These expenses include school fees, books, clothing, and related costs. We would expect that the demand for education would be inversely related to these direct costs—that is, the higher the school fees and associated costs, the lower the private demand for education, everything else being equal. For poor people, direct primary school costs often represent a major burden and a real financial constraint. In much of Africa, for example, the average cost of sending a child to primary school (not including opportunity costs) is typically in excess of 20% of per capita income.
4. The indirect or opportunity costs of education. An investment in a child's education involves more than just the direct out-of-pocket costs of that education, especially when the child reaches the age at which he can make a productive contribution to family income. At this point, for each year the child continues his

education, he in effect forgoes the money income he could expect to earn or the output he could produce for the family farm. This opportunity cost of education must also be included as a variable affecting its demand." We would expect the relationship between opportunity costs and demand to be inverse—that is, the greater the opportunity costs, the lower the demand for education.

Although several other important variables, many of them noneconomic (e.g., cultural traditions, social status, education of parents, and size of family), certainly influence the demand for education, concentrating on the four variables just described can give important insights into the relationship between the demand for education and the supply of employment opportunities.

p.373

To give an example, suppose that we have a situation in an LDC where the following conditions prevail:

1. The modern-traditional or urban-rural wage gap is of the magnitude of, say, 100% for secondary versus primary school graduates.
2. The rate of increase in modern-sector employment opportunities for primary school dropouts is slower than the rate at which such individuals enter the labor force. The same may be true at the secondary level and even the university level in countries such as India, Mexico, Egypt, Pakistan, Ghana, Nigeria, and Kenya.
3. Employers, facing an excess of applicants, tend to select by level of education. They will choose candidates with secondary rather than primary education even though satisfactory job performance may require no more than a primary education.
4. Governments, supported by the political pressure of the educated, tend to bind the going wage to the level of educational attainment of jobholders rather than to the minimum educational qualification required for the job.
5. School fees at the early primary level are often nominal or even nonexistent. They tend to rise sharply at the late primary and secondary level and then decline again at the university level as the state bears a larger proportion of the college student's costs.

Under these conditions, which conform closely to the realities of the employment and education situation in many developing nations, we would expect the demand for education to be substantial. This is because the anticipated private benefits of more schooling would be large compared to the alternative of little or no schooling, while the direct and indirect private educational costs are relatively low. And the demand spirals upward over time. As job opportunities for the uneducated diminish, individuals must safeguard their position by acquiring a complete primary education. This may suffice for a while, but the internal dynamics of the employment demand-supply process eventually lead to a situation in which job prospects for those with only primary education begin to decline. This in turn creates a growing demand for secondary education. But the demand for primary education must increase concurrently, as some who were previously content with no education are now being squeezed out of the labor market.

The irony is that the more unprofitable a given level of education becomes as a terminal point, the more demand for it increases as an intermediate stage or precondition to the next level of education! This puts great pressure on governments to expand educational facilities at *all* levels to meet the growing demand. If they cannot respond fast enough, the people may do so on their own, as evidenced, for example, by the Harambee school self-help movement in Kenya, where community-sponsored secondary schools were built throughout the country

p.375

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with the knowledge that their maintenance would be taken over later by the government.

The upshot of all this is the chronic tendency for developing nations to expand their educational facilities at a rate that is extremely difficult to justify either socially or financially in terms of optimal resource allocation. The social benefits of education (the payoff to society as a whole) fall far short of the private benefits. Each worsening of the employment situation calls forth an increased demand for (and supply of) more formal education at all levels. At first it is primarily the uneducated who are found among the ranks of the unemployed. However, over time there is an inexorable tendency for the average educational level of the unemployed to rise as the supply of school graduates continues to exceed the demand for middle- and high-level workers. The better-educated must, after varying periods of unemployment during which aspirations are scaled downward, take jobs requiring lower levels of education. The diploma and degree thus become basic requirements for employment; they no longer provide entree into a high-paid job, nor,do they provide the education they were intended to signify'

Governments and private employers in many LDCs tend to reinforce this trend by continuously upgrading formal educational entry requirements for jobs previously filled by less educated workers. Excess educational

qualification becomes formalized and may resist downward adjustment. Moreover, to the extent that trade unions succeed in binding going wages to the educational attainments of jobholders, the going wage for each job will tend to rise (even though worker productivity in that job does not significantly increase). Existing distortions in wage differentials will be magnified, thus stimulating the demand for education even further.

As a result of this **educational certification** and displacement phenomenon, students who for some reason (primarily poverty) are unable to continue their education will fall by the wayside as unemployed school dropouts. At the same time, the more affluent continue to overqualify themselves through more years of education. In the extreme case, a situation evolves like that of contemporary India, Pakistan, and Bangladesh, where the higher education system is in effect an "absorber of last resort" for the great numbers of educated unemployed." This is a terribly expensive form of unemployment compensation. Moreover, because people cannot remain students until they retire, these great masses will eventually have to emerge from behind the walls of academia into a world of fight labor markets. The result will be more visible unemployment among people who are both highly educated and highly vocal. For example, a study in Bangladesh revealed that the unemployment rate among university graduates in 1980 was 47%."

Finally, it should be pointed out that many individuals tend to resist what they see as a downgrading of their job qualifications. Consequently, even though on the demand-for-labor side employers will attempt to substitute the more educated for the less educated for a given job, on the supply side there will be many job seekers whose expectations exceed the emerging realities of the labor market. They might prefer to remain unemployed for some time rather than

accept a job that they feel is beneath them. It follows that as a result of these frictional effects and lags in adjustment on the supply side, unemployment will exist at all levels of education even though it is concentrated at lower levels and, in general, is inversely related to educational attainment.

Social versus Private Benefits and Costs

The inexorable attraction of ever-higher levels of education is even more costly than this simple picture suggests. Typically in developing countries, the social costs of education (the opportunity cost to society as a whole resulting from the need to finance costly educational expansion at higher levels when these limited funds might be more productively used in other sectors of the economy) increase rapidly as students climb the educational ladder. The private costs of education (those borne by students themselves) increase more slowly or may even decline.

This widening gap between social and private costs provides an even greater stimulus to the demand for higher education than it does for education at lower levels. Educational demand therefore becomes increasingly exaggerated at the higher (postsecondary) levels. But educational opportunities can be accommodated to these distorted demands only at full social cost. As demands are generated progressively through the system, the social cost of accommodation grows much more rapidly than the places provided. More and more resources may be misallocated to educational expansion in terms of social costs, and the potential for creating new jobs will consequently diminish for lack of public financial resources.

Figure 11.1 provides an illustration of this divergence between private and social benefits and costs. It also demonstrates how this divergence can lead to a misallocation of resources when private interests supersede social investment criteria. In Figure 11.la, expected private returns and actual private costs are plotted against years of completed schooling. As a student completes more and more years of schooling, his expected private returns grow at a much faster rate than his private costs, for reasons explained earlier. To maximize the difference between expected benefits and costs (and thereby the private rate of return to investment in education), the optimal strategy for a student would be to secure as much schooling as possible.

Now consider Figure ll.lb, where social returns and social costs are plotted against years of schooling. The social benefits curve rises sharply at first, reflecting the improved levels of productivity of, say, small farmers and the selfemployed that result from receipt of a basic education and the attainment of literacy, arithmetic skills, and elementary vocational skills. Thereafter, the marginal social benefit of additional years of schooling declines more rapidly, and the social returns curve begins to level off. By contrast, the social cost curve shows a slow rate of growth for early years of schooling (basic education) and then a much more rapid growth for higher levels of education. This rapid increase in the marginal social costs of postprimary education is the result both of the much more expensive capital and recurrent costs of higher education (buildings

and equipment) and, more important, of the fact that much postprimary education in developing countries is heavily subsidized.[14]

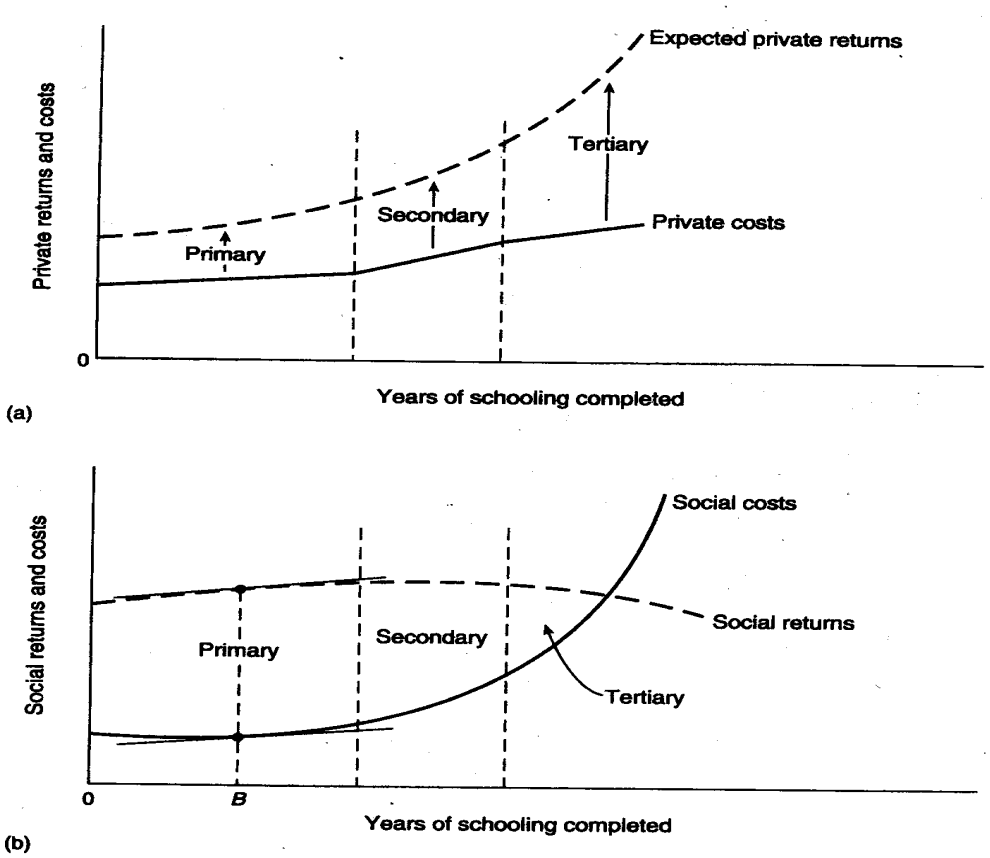

FIGURE 11.1 Private versus Social Benefits and Costs of Education: An Illustration

It follows from Figure 11.lb that the optimal strategy from a social viewpoint, the one that maximizes the net social rate of return to educational investment, would be one that focuses on providing all students with at least *B* years of schooling. Beyond *B* years, marginal social costs exceed marginal social benefits, so additional educational investment in new, higher-level school places will yield a negative net social rate of return. Moreover, in light of the recent empirical results of the Behrman and Birdsall study, the optimal social investment strategy may be to upgrade the quality of existing primary schools rather than to expand their quantity. This quality-quantity trade-off would be represented in the figure by an upward shift of the social returns curve in Figure 11.1b.

Figure 11.1 therefore illustrates the inherent conflict between optimal private and social investment strategies—a conflict that will continue to exist as long as private and social valuations of investment in education continue to diverge as students climb the educational ladder (see Table 11.4 for evidence of the magnitude of these divergences).

To a large degree, the problem of divergent social versus private benefits and costs has been artificially created by inappropriate public and private policies with regard to wage differentials, educational selectivity, and the pricing of educational services. As a result, private perceptions of the value of education exceed its social value, which must take account of rising unemployment. As long as artificial and nonmarket incentives in the form of disproportionate expected benefits and subsidized costs continue to exist and place a premium on the number of years one spends getting an education, the individual will decide that it is in his best private interests to pursue a lengthy formal education process even though he may be aware that modern-sector jobs are becoming more scarce and unemployment rates are rising. Unless these various price signals are made to conform more closely to social realities, the misallocation of national resources (in this case, too much expenditure on formal education) will persist and possibly increase.

What is needed is a properly functioning reward and cost structure that develops and allocates human resources in accordance with requirements and opportunities in various segments of the economy. Where this is absent (where high wage premiums are paid to workers in the modern urban sector and scarce jobs are allocated on the basis of ever-increasing educational credentials), two obvious misallocations of human resources are likely to occur. First, with the output of the educational system greatly in excess of what the economy can absorb, many students will emerge seeking jobs for which they may be educationally qualified but which have been preempted by others with even more education. They become temporarily unemployed for as long as it takes for their aspirations and status requirements, partly perhaps instilled in them by the educational system itself, to adjust to the stinging realities of unemployment in the modern sector. Second, those who adjust their sights downward and secure modern-sector employment normally have to take jobs for which they are overeducated in terms of the number of years spent in school. Those who fail to get modern-sector jobs at all swell the ranks of the permanently unemployed or become self-employed in the informal sector. They are thus denied the opportunity to contribute productively to the society that invested so heavily in their education. This combination of the overpaid and, in many cases, overeducated employed and the impoverished and unproductive educated unemployed reflects a serious misallocation of scarce national resources. The resources allocated to the expansion of the educational system might alternatively have been spent on needed rural public works projects. Such investment would provide emergency employment opportunities for recent graduates as well as for people with less education.

Having looked at the economics of education and employment, we can now

examine some of the broader interrelationships among education, society, and development.

Education, Society, and Development: Some Issues

We cannot discuss the relationship between education and development without explicitly linking the structure of the educational system to the economic and social character of the Third World society in which it is contained. Educational systems more often than not reflect the essential nature of that society. For example, if the society is inegalitarian in economic and social structure, the educational system will probably reflect that bias in terms of who is able to proceed through the system. At the same time, education *can* influence the future shape and direction of society in a number of ways. Thus the link between education and development goes both ways. By reflecting the sodoeconomic structures of the societies in which they function (whether egalitarian or not), educational systems tend to perpetuate, reinforce, and reproduce those economic and social structures. Conversely, educational reform, whether introduced from within or outside the system, has the great potential for inducing corresponding social and economic reform in the nation as a whole.

With these general observations in mind, let us look at five specific economic components of the development question—growth, inequality and poverty, population and fertility, migration, and rural development—to see in what way they influence or are influenced by most LDC educational systems. Such an examination will demonstrate the important two-way relationship that exists between education and development. It should also provide us with an even broader understanding of the development problems and issues that have been discussed in previous chapters.

Education and Economic Growth

For many years, the proposition that educational expansion promoted and in some cases even determined the rate of overall GNP growth remained unquestioned. The logic seemed fairly straightforward. Third World nations were deficient in their supply of semiskilled and skilled manpower. Without such manpower, which, it was assumed, could be created only through the-formal educational system, development leadership in both the public and private sectors would be woefully lacking.

Impressive statistics and numerous quantitative studies of the sources of economic growth in the West were paraded out to demonstrate that it was not the growth of physical capital but rather of human capital (the *residual* in econometric production function estimates) that was the principal source of economic progress in the developed nations.[15] Clearly, in the newly independent nations of Africa and Asia, there was an immediate need to build up the human as well as physical capital infrastructure in order to provide indigenous leadership

for the major tasks of development. Rapid quantitative expansion of enrollments therefore appeared justified in light of the substantial manpower scarcities of the 1950s and 1960s. And although it is often difficult to

document statistically it seems clear that the expansion of educational opportunities at all levels has contributed to aggregate economic growth" by (1) creating a more productive labor force and endowing it with increased knowledge and skills; (2) providing widespread employment and income-earning opportunities for teachers, school and construction workers, textbook and paper printers, school uniform manufacturers, and related workers; (3) creating a class of educated leaders to fill vacancies left by departing expatriates or otherwise vacant positions in governmental services, public corporations, private businesses, and professions; and (4) providing the kind of training and education that would promote literacy and basic skills while encouraging "modern" attitudes on the part of diverse segments of the population. Even if alternative investments in the economy could have generated greater growth, this would not detract from the important contributions, noneconomic as well as economic, that education can make and has made to promoting aggregate economic growth. That an educated and skilled labor force is a necessary condition of sustained economic growth cannot be denied. However, any evaluation of the role of education in the process of economic development should go beyond the analysis of the single statistic of aggregate growth. We must also consider the structure and pattern of that economic growth and its distribution implications—who benefits.

Education, Inequality, and Poverty

Studies on the economics of education in both developed and developing nations formerly focused on the link among education, labor productivity, and output growth. This is not surprising in light of the main objective of development during the 1950s and 1960s, the maximization of aggregate rates of output growth. As a result, the impact of education on the distribution of income and on the elimination of absolute poverty was largely neglected. Recent studies, however, have demonstrated that contrary to what might have been assumed, the educational systems of many developing nations sometimes act to increase rather than to decrease income inequalities.'7

The basic reason for this perverse effect of formal education on income distribution is the positive correlation between level of education and level of lifetime earnings. This correlation holds especially for workers who are able to complete secondary and university education where income differentials over workers who have completed only part or all of their primary education can be on the order of 300% to 800%. And as levels of earned income are clearly dependent on years of completed schooling, it follows that large income inequalities will be reinforced if students from the middle and upper income brackets are represented disproportionately in secondary and university enrollments. In short, if for financial or other reasons the poor are effectively denied access to secondary and higher educational opportunities, the educational system can actually perpetuate and even increase inequality in Third World nations.

Educational economist John Simmons gives the following sketch of how the poor are beginning to regard education:

> Schooling, the poor quickly learn, in most countries, is an escape from poverty for only a few. The poor are the first to drop out because they need to work, the first to be pushed out because they fall asleep in class as one result of malnourishment, and the first to fail their French and English tests because upper income children have had better opportunities at home. The hope brought to village parents by the construction of the primary school soon fades. Enough schooling to secure a steady, even menial job for their son, let alone for their daughter, seems just beyond their grasp. Before . . . any schooling would have done to achieve their aspiration. Now a primary school certificate is needed, and some are saying that even students with some secondary schooling cannot get a steady job; artd they could never afford to send their son away to town for secondary schooling."

There are two fundamental economic reasons why one might suspect that many LDC educational systems are inherently inegalitarian, in the sense that poor students have less chance of completing any given educational cycle than more affluent students. First, the private costs of primary education (especially in view of the opportunity cost of a child's labor to poor families) are higher for poor students than for more affluent students. Second, the expected benefits of primary education are lower for poor students. Together, the higher costs and lower expected benefits of education mean that a poor family's rate of return from investment in a child's education is lower than it is for other families. The poor are therefore more likely to drop out during the early years of schooling. Lets examine in slightly more detail the reason why costs might be relatively higher and benefits relatively lower for a poor child.

First, the higher opportunity cost of labor to poor families means that even if the first few years of education are free, they are not without cost to the family. Children of primary school age are typically needed to work on family farms, often at the same times as they are required to be at school. If a child cannot work because he or she is at school, the family will either suffer a loss of valuable subsistence output or be required to hire paid

labor to replace the absent child. In either case, there is a real cost to a poor family of having an able-bodied child - attend school when there is productive work to be done on the farm—a cost not related to tuition and of much less significance to higher-income families, many of whom may live in urban areas where child work is not needed.

As a result of these higher opportunity costs, school attendance, and therefore school performance, tends to be much lower for children of poor families than for those from higher-income backgrounds. Thus in spite of the existence of free and universal primary education in many LDCs, children of the poor, especially in rural areas, are seldom able to proceed beyond the first few years of schooling. Their relatively poor school performance may have nothing to do with a lack of cognitive abilities; it may merely reflect their disadvantaged economic circumstances.

This financial process of eliminating the relatively poor during their first few years of schooling is often compounded by the substantial tuition charged at the secondary level. In many developing countries, annual tuition (especially at the better private schools) is roughly equivalent to the per capita national income. The cost of education therefore becomes prohibitive to lower-income families. This in effect amounts to a system of educational advancement and selection based not on any criteria of merit but strictly on family income levels. It thus perpetuates concentration of income within certain population groups and means that earned income will accrue primarily to people who already possess the bulk of unearned income and wealth—those whose assets already place them in the upper deciles of the personal income distribution scale.

The inegalitarian nature of many Third World educational systems is compounded even further at the university level, where the government may pay the full cost of tuition and fees and even provide university students with income grants in the form of stipends. Because most university students already come from the upper-income brackets (and were so selected at the secondary level), highly subsidized university education using public funds often amounts to a transfer payment from the poor to the wealthy in the name of "free" higher education![19]

Table 11.6 shows how government educational spending benefited different occupational (and thus income) groups in 1980 in various Third World regions. The last three columns are the most significant. Each shows the ratio of the percentage of public educational resources received by (1) low-income farmers, (2) middle-income manual workers and traders, and (3) higher-income white collar workers to their percentage representation in the population. A subsidy benefit ratio of 1.00 would mean, for example, that a group comprising 25% of the working population receives 25% of all government spending on education. The data clearly show that the children of white-collar families receive disproportionate public educational benefits, whereas farm children are undersubsidized. For example, in Francophone, Africa, children from (mostly urban) white-collar families receive more than 10 times as much in state subsidies than children rural farm families. When we combine this information with data measuring the incidence of direct and indirect taxation, which, as we shall see in Chapter 17, is often regressive in developing countries, it becomes clear that the educational system is not a vehicle for promoting greater equality. It often works in the opposite direction to reinforce or widen inequality.

Education, Internal Migration, and the Brain Drain

Education seems to be an important factor influencing rural-urban migration. Numerous studies of migration in diverse countries have documented the positive relationship between the educational attainment of an individual and his or her propensity to migrate from rural to urban areas. Basically, individuals with higher levels of education face wider urban-rural real-income differentials and higher probabilities of obtaining modern-sector jobs than those with lower levels of education (recall from Chapter 8 how income differentials and job

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Table 11.6 Share of Public Resources for Education Appropriated by Different Socioeconomic Groups, by Region, 1980

Region	Percentage in the Population			Percentage of Public School Resources			Ratio between Percentage of Resources and of Population		
	FARMERS	MANUAL WORKERS AND TRADERS	WHITE-COLLAR WORKERS	FARMERS	MANUAL WORKERS AND TRADERS	WHITE-COLLAR WORKERS	FARMERS	MANUAL WORKERS AND TRADERS	WHITE-COLLAR WORKERS
Africa									
Anglophone	76	18	6	56	21	23	0.73	1.19	3.78
Francophone	76	18	6	44	21	36	0.58	1.15	5.93
Asia	58	32	10	34	38	28	0.59	1.19	2.79
Latin America	36	49	15	18	51	31	0.49	1.04	2.03
Middle East and North Africa	42	48	10	25	46	29	0.60	0.35	2.87
Members of the Organization for Economic Cooperation and Development (OECD)	12	53	35	11	46	42	0.95	0.87	1.2

SOURCE: Emmanuel Jimenez, "The public subsidization of education and health in developing countries: A review of equity and efficiency," *World Bank Research Observer* 1 (January 1986), tab. 3.

probabilities interact to determine migration patterns). The probability variable in particular accounts for the growing proportion of the more educated rural migrants in the face of rising levels of urban unemployment among the less educated.[20]

Education also plays a powerful role in the growing problem of the international migration of high-level educated workers—the so-called **brain drain—**from poor to rich countries. This is particularly true in the case of scientists, engineers, academics, and physicians, many thousands of whom have been trained in home-country institutions at considerable social cost only to reap the benefits from and contribute to the further economic growth of the already affluent nations.

The international brain drain deserves mention not only because of its effects on the rate and structure of LDC economic growth but also because of its impact on the style and approach of Third World educational systems. The brain drain, broadly construed, has not merely reduced the supply of vital professional people available within developing countries (see Chapter 4); perhaps even more serious, it has diverted the attention of the scientists, physicians, architects, engineers, and academics who remain from important local problems and goals. These include the development of appropriate technology: the promotion of low-cost preventive health care; the construction of low-cost housing, hospitals, schools, and other service facilities; the design and building of functional yet inexpensive labor-intensive roads, bridges, and machinery; the development of relevant university teaching materials such as appropriate introductory economics texts; and the promotion of problem-oriented research on vital domestic development issues. Such needs are often neglected as, dominated by rich country ideas as to what represents true professional excellence, those highly educated and highly skilled Third World professionals who do not physically migrate to the developed nations nevertheless migrate intellectually in terms of the orientation of their activities. This "internal" brain drain is much more serious than the external one.

For example, we constantly find developing nations with numerous physicians specializing in heart diseases while preventive tropical medicine is considered a second-rate specialty. Architects are concerned with the design of national monuments and modern public buildings, while low-cost housing, schools, and clinics remain an area of remote concern. Engineers and scientists concentrate on the newest and most modern electronic equipment while simple machine tools, hand- or animal-operated farm equipment, basic sanitation and waterpurifying systems, and labor-intensive mechanical processes are relegated to the attention of "foreign experts." Finally, some academic economists teach and research totally irrelevant, sophisticated mathematical models of nonexistent competitive economies, while problems of poverty, unemployment, rural development, and education are considered less intellectually interesting. In all these diverse professional activities, performance criteria are based not on contributions to national development but rather on praise from the international community (professional mentors in the developed nations). The publication of an

LDC scholar's paper in an international professional journal or the receipt of an invitation to attend a professional meeting in London, Paris, New York, or Moscow is often deemed more important than finding a

solution to a local technological, agricultural, medical, or economic problem.

Education of Women, Fertility, and Child Health

With regard to the education and fertility relationship, the evidence is also clear.[21] Most studies reveal an inverse relationship between the education of women and their size of family, particularly at the lower levels of education. Assuming that lower levels of urban unemployment (especially among the educated) and lower levels of fertility are important policy objectives for Third World governments, the basic issue is whether the continued rapid quantitative expansion of the formal educational system (and the resource allocation decisions implicit. therein) will ameliorate or exacerbate the twin problems of accelerating internal migration and rapid population growth. With respect to this issue, both theory and evidence seem once again to indicate that given limited government resources, the further excessive quantitative expansion of school places beyond perhaps basic education is both undesirable and unwise. There are two main reasons for this conclusion.

First, as we discovered earlier in the chapter, any rapid expansion of the formal primary system creates inexorable pressures on the demand side for the expansion of secondary and tertiary school places. The net result is the widespread phenomenon of excessive expansion of school places from the standpoint of real resource needs and the associated dilemma of rising levels of rural-urban migration and urban unemployment among a cadre of increasingly more educated and more politically vocal migrants.

Second, if, as many observers have argued, the education of women does affect their fertility behavior, primarily through the mechanism of raising the opportunity cost of their time in child-rearing activities (see Chapter 6), then it follows that unless sufficient employment opportunities for women (as well as for men) can be created, the reliance on educational expansion as a policy instrument for lowering fertility will be much less effective. However, reallocating *existing* educational resources to women's education, in combination with an aggressive program of rural and urban female employment creation, could go a long way toward achieving the twin goals of fertility reduction and poverty alleviation.

Finally, as mentioned earlier in the chapter, educating women has been shown to be a critical ingredient in breaking the vicious multigenerational cycle of poor child health, low educational performance, low income, high fertility, and poor child health. Numerous studies have documented that women's education leads to lower infant mortality rates. These studies also point to a delayed fertility reduction that results not only in healthier children but also in children possessing greater human capital as parents substitute child quality (fewer, bettereducated children) for child quantity.

Education and Rural Development

In Chapter 9, we argued that if national development is to become a reality in Third World nations, there must be a better balance between rural and urban development. Because most of the priority projects of the past few decades focused on the modernization and development of the urban sector, much more emphasis must be placed in future years on expanding economic and social opportunities in rural areas. Although agricultural development represents the main component of any successful rural development program simply because 70% of Third World rural populations are engaged directly or indirectly in agricultural activities, rural development must nevertheless be viewed in a broader perspective.

First and foremost, it should be viewed in the context of far-reaching transformations of economic and social structures, institutions, relationships, and processes in rural areas. The goals of rural development cannot simply be restricted to agricultural and economic growth. Rather, they must be viewed in terms of a balanced economic and social development with emphasis on the equitable distribution, as well as the rapid generation, of the benefits of higher levels of living. Among these broader goals, therefore, are the creation of more productive employment opportunities both on and off the farm; more equitable access to arable land; more equitable distribution of rural income; more widely distributed improvements in health, nutrition, and housing; and broadened access to both formal (in-school) and **nonformal** (out-of-school) **education,** for adults as well as children, of a sort that will have direct relevance to the needs and aspirations of rural dwellers.

How do present Third World systems of education fit into this holistic view of the meaning of rural development? Basically, not very well. The formal primary school system in most LDCs is, with minor modifications, a direct transplant of the system in developed countries. The overriding goal is to prepare all children to pass standard qualifying examinations for secondary schools; hence the curricula have a very strong urban bias. The priority needs of the greatest proportion of students—those who will live and work in rural areas—are given minimal attention. Major groups with important rural training needs, such as out-of-school children and youth, women, and small subsistence farmers, are largely neglected by organized educational programs, both formal and nonformal. As a result, much of the education in the rural communities of developing nations contributes little toward improving levels of agricultural productivity or assisting students to function

more effectively in the rural environment.

What, then, might be the real and lasting educational needs for rural development? Philip H. Coombs and Manzoor Ahmed have provided one very appealing typology. They group these educational needs for both young people and adults, males and females, into four main categories':

1. General or basic education (literacy, arithmetic, an elementary understanding of science and the immediate environment, etc.)—what most primary and secondary schools now seek to achieve
4. Family improvement education—designed primarily to impart knowledge, skills,

and attitudes useful for improving the quality of family life and including such subjects as health and nutrition, homemaking and child care, home repairs and improvements, and family planning

3. Community improvement education—designed to strengthen local and national institutions and processes through instruction in such matters as local and national government, cooperatives, and community projects
4. Occupational education—designed to develop particular knowledge and skills associated with various economic activities that are useful in making a living

For the most part only category I—general education—has been emphasized in developing countries. But the learning needs of the three principal occupational subgroups of rural areas—farmers and farm workers, persons engaged in nonfarm rural enterprises, and rural general personnel—are likely in each case to fit quite poorly with most formal educational curricula. Table 11.7 shows how these learning needs vary among the three groups. Effective and well-designed educational programs catering to each of these occupational groups are needed if education is to make its essential contribution to rural development.

Summary and Conclusions: Major Educational Policy Options

Developing nations are confronted with two basic alternatives in their policy approaches to problems of education.[23] They can continue automatically to expand formal systems at the fastest possible pace with perhaps some minor modifications in curricula, teaching methods, and examinations, while retaining the same institutional labor market structures and educational costing policies. Or they can attempt to reform the overall educational system by modifying the conditions of demand for and the supply of educational opportunities and by reorienting curricula in accordance with the real resource needs of the nation. Our evidence leads to the conclusion that the first alternative is likely to exacerbate the problems of unemployment, poverty, inequality, rural stagnation, and international intellectual dominance that now define the conditions of underdevelopment in much of Africa, Asia, and Latin America and that the second alternative should therefore be pursued.

Because educational systems largely reflect and reproduce rather than alter the economic and social structures of the societies in which they exist, any program or set of policies designed to make education more relevant for development needs must operate simultaneously on two levels:

1. Modifying the economic and social signals and incentives *outside* the educational system that largely determine the magnitude, structure, and orientation of the aggregate private demand for education and consequently the political response in the form of the public supply of school places.

Table 11.7 Illustrative Rural Occupational Groups and Their Learning Needs

Groups	Types of Learning Needs at Varying Levels of Sophistication and Specialization
A. Persons directly engaged in agriculture	
1. Commercial farmers	Farm planning and management, rational decision making, recordkeeping, cost and revenue computations, use of credit
2. Small subsistence and semisubsistence farm families	Application of new inputs, varieties, improved farm practices
3. Landless farm workers	Storage, processing, food preservation
	Supplementary skills for farm maintenance and improvement, and sideline jobs for extra income
	Knowledge of government services, policies, programs, targets
	Knowledge and skills for family improvement (e.g., health, nutrition, home economics, child care, family planning)
	Civic skills (e.g., knowledge of how cooperatives, local government, national government function)
B. Persons engaged in off-farm commercial activities	
1. Retailers and wholesalers of farm supplies and equipment, goods and other items	New and improved technical skills applicable to particular goods and services
2. Suppliers of repair and maintenance services	Quality control
3. Processors, storers, and shippers of agricultural commodities	Technical knowledge of goods handled sufficient to advise customers on their use, maintenance, etc.
4. Suppliers of banking and credit services	Management skills (business planning; recordkeeping and cost accounting; procurement and inventory control; market analysis and sales methods; customer and employee relations; knowledge of government services, regulations, taxes; use of credit)
5. Construction and other artisans	
6. Suppliers of general transport services	
7. Small manufacturers	
C. General services personnel: rural administrators, planners, technical experts	
1. General public administrators, broad-gauged analysts, and planners at subnational levels	General skills for administration, planning, implementation, information flows, promotional activities
2. Managers, planners, technicians, and trainers for specific public services (e.g., agriculture, transport, irrigation, health, small industry, education, family services, local government)	Technical and management skills applying to particular specialties
3. Managers of cooperatives and other farmer associations	Leadership skills for generating community enthusiasm and collective action, staff team work, and support from higher echelons
4. Managers and other personnel of credit services	

SOURCE: Philip H. Coombs and Manzoor Ahmed, *Attacking Rural Poverty: How Nonformal Education Can Help* (Baltimore, Md.: Johns Hopkins University Press, 1974), p. 17.

2. Modifying the *internal* effectiveness and equity of educational systems through appropriate changes in

course content (especially for rural areas), structures of public versus private financing, methods of selection and promotion, and procedures for occupational certification by educational level.

Only by policies designed simultaneously to achieve these two objectives can the real positive links between education and development be successfully forged. Let us conclude, therefore, with a brief review of what these external and internal policies might specifically encompass.

Policies Largely External to Educational Systems

Adjusting Imbalances, Signals, and Incentives

Policies that tend to remedy major economic imbalances and incentive distortions (e.g., in income and wage differentials) and alleviate social and political constraints on upward mobility can have the multiple beneficial effect of increasing job opportunities, slowing the rate of rural-urban migration, and facilitating development-related modifications of educational systems.

Modifying Job Rationing by Educational Certification

To break the vicious cycle in which overstated job specifications make **overeducation** necessary for employment, policies are needed that will induce or require public and private employers to seek realistic qualifications even though the task of job rationing may be made somewhat more difficult as a result. Basic to this procedure would be the elimination of school certificates for many jobs, especially in the public sector (janitors, messengers, file clerks, etc.), which tends to set the pattern for the private sector.

Curbing the Brain Drain

Controlling or taxing the international migration of indigenously trained highlevel professionals is a very sensitive area. It can potentially infringe on the basic human right and freedom to choose the nature and location of one's work. In a repressive regime, such a restrictive policy can be morally repugnant. However, when a nation invests scarce public financial resources in the education and training of its people only then to forgo the social returns on that investment as a result of international migration, it seems both economically and morally justifiable to seek either temporarily to restrict that movement in the national interest or, better, to tax the overseas earnings of professional migrants and reinvest those revenues in programs of national development. Such a tax on overseas earnings would act as a financial disincentive to migrate. Its implementation, however, would require the cooperation and assistance of the governments of the countries to which these professionals migrate.[24]

Policies Internal to Educational Systems

Educational Budgets

Where politically feasible, educational budgets should grow more slowly than in the past to permit more revenue to be used for the creation of rural and urban employment opportunities. Moreover, a larger share of educational budgets should be allocated to the development of primary as opposed to secondary and higher education in order to promote self-education and rural work-related learning experiences in later life.

Subsidies

Subsidies for the higher levels of education should be reduced as a means of overcoming distortions in the aggregate private demand for education. Policies should be promoted by which the beneficiary of education (as opposed to the student's family or society as a whole) would bear a larger proportion of educational costs as the student proceeds through the system. This should be done either directly, through loan repayments, or by service in rural areas. At the same time, low-income groups should be provided with sufficient subsidies to permit them to overcome the sizable private costs (induding opportunity costs) of schooling.[25]

Primary School Curricula in Relation to Rural Needs

To maximize the productivity of rural human resources, primary school curricula and nonformal educational opportunities for school dropouts and adults should be directed more toward the occupational requirements of rural inhabitants, whether in small-farm agriculture, nonfarm artisan and entrepreneurial activities, or public and commercial services. Such curricula and task-related reorientations of rural learning systems, however, will not be effective in eliciting popular support unless rural economic opportunities are created so that small farmers, artisans, and entrepreneurs can make use of their vocational knowledge and training. Without these incentives, people will justifiably view such formal and nonformal occupational training programs with considerable skepticism. They would probably rather pursue the formal school certificate and take their chances in the urban job lottery.

Quotas

To compensate for the inequality effects of most existing formal school systems, some form of **quotas** may be required to ensure that the proportion of low income students at secondary and higher educational levels at least bears some relationship to their proportion in the overall population. Under present systems, indirect quotas by income status often determine which students proceed through the educational system. Replacing this de facto quota system with an alternative that ensures that capable low-income students will be able to improve their own and their family's well-being by overcoming the financial barriers to educational advancement through loans and subsidies would go a long way toward making educational systems true vehicles of economic and social equality. The nature of such quota systems will obviously vary from country to country. But there is no a priori basis for assuming that such a quota by income level for academically qualified low-income students will not be more efficient and more socially productive for both growth and equity than the present system, which tends to perpetuate poverty and inequality while maintaining growth-inhibiting dualistic economic and social structures.

Case Study

The Economy of Malaysia

Geographic, Social, and Economic Indicators
Capital Kuala Lumpur **Area** 330,000 km2
Population 18.7 million (1992)
GNP **per capita** U.S. $2,340 (1990)
Population (average annual growth rate) 2.6% (1980-1990)
GNP per capita (average annual growth rate) 2.5% (1980-1990)
Agriculture as share of GDP 22% (1987)
Infant mortality rate (per 1,000 live births) 29 (1990)
Daily calorie supply per capita 2,686 (1988)
Primary school enrollment rate 100% (1990)
Illiteracy rate (age 15+) 27% (1985)
Human Development Index 0.79 (medium) (1990)

Malaysia occupies the southern half of the Malay peninsula and the northern coast of the island of Borneo, sonic 650 kilometers to the east across the South China Sea. Peninsular Malaysia (known as Malaya) borders Thailand in the north and is separated from Singapore in the south by the narrow JohorStrait.

Malaysia's population of about 19 million people is growing at a rate of more than 2% a year. About 38% of the inhabitants are under 15 years of age. Population distribution is uneven, with some 14.6 of the 19 million residents concentrated on the Malayian lowlands. Over the past three decades, Malaysia has been one of the topperforming developing nations. It has invested heavily in education. Virtually all Malaysian children attend primary school, and well over 50% attend secondary school. These are substantial accomplishments for a country long beset by civil war, racial tensions, and only 30 years of political independence. By combining educational investment with health expenditures and employment creation, Malaysia has achieved one of the lowest poverty rates (26%) among all LDCs.

Malaysia's population comprises many ethnic groups; the Malays, the largest, make up 49%. The politically dominant Malays are indigenous and, by constitutional definition, all Muslim. Despite rapid urbanization, they remain largely rural and lag economically behind the large Chinese minority. Nearly one-third of the Malaysians are Chinese, most of whose ancestors immigrated during the nineteenth and early twentieth centuries. The Chinese are mainly urban, and by virtue of their important role in trade, business, and finance, they possess considerable economic power.

About 85% of Malaysia's population speaks Malay, the official language, though with considerable variation in facility. English is used widely in government and bus*iness.*

Literacy rates range from 60% in the *ngineo* states (Sarawak, Sabah, and Labuan) to 80% in Malaya.

On independence from British rule in 1057, Malaysia inherited an economy dominated by two commodities, rubber and tin. in the ensuing years, Malaysia's economic record has been one of the most successful in Asia. From 1965 to 1984, the economy experienced a period of broad diversification and sustained rapid growth

averaging 7% to g%. Per capita gross national product reached $2,000 in 1984. Palm oil, timber, cacao, and pepper were added to Malaysia's export crops. Malaysia is the world's leading producer of rubber, tin, palm oil, and tropical timber. The petroleum sector expanded rapidly after 1980, making Malaysia a significant exporter of oil and liquefied natural gas.

New foreign and domestic investment in manufacturing, much of it from the United States and Japan, led to increasing exports of electronic components, electric consumer goods, textile products, and other manufactures. Manufacturing grew from 13.4% of gross domestic product in 1970 to an estimated 26% in 1990.

The worldwide recession in 1981-1982 depressed the prices of Malaysia's traditional commodity exports. Growth slackened and investment fell. The government sought to stimulate the economy and speed up the growth of industry through increased spending on a number of heavy-industry "•arid• infrastructure projects. Public entities and government-owned companies also spent heavily to acquire majority control of most of the large foreign-owned plantations. Much of the increased public spending was financed by foreign borrowing, pushing Malaysia's foreign debt to $15 billion in 1984.

Malaysia's long period of high growth came to an abrupt halt in 1985-1986. The sharp fall in world commodity prices (oil and palm oil prices were halved) sent Malaysia's

economy •into recession. Real output was stagnant during 1985-1986, but the worsening of Malaysia's terms of trade (the prices of the country's exports compared to the prices of imports) caused nominal GNP to fall by 11.5% in 1985 and 1986 combined. Per capita GNP fell from $2,000 in 1984 to $1,600 in 1986.

The size of the public-sector defiat and the growth of Malaysia's foreign debt had already led the government to alter its policies. Public spending and foreign borrowing were cut back, although depreciation of the Malaysian currency against the yen and European currencies since 1985 has magnified the size of the debt measured in Malaysian or U.S. dollars. The ambitious growth and spending targets of the Fifth Malaysia Plan (1986-1990) were abandoned. The government also has placed greater emphasis on the role of the private sector in development and is taking steps to privatize a number of government-owned corporations and government agencies. Shares in the national airline and the national shipping company have been sold to investors, and telecommunications has been turned into a corporation (still 100% government-owned) in preparation for an eventual stock market listing. Malaysia's recovery from recession began in late 1986 and has gained strength since. Improved commodity prices and strong growth in exports of manufactured goods have led the recovery. The government estimates that real GDP grew 4.7% in 1987,9.5% in 1988, and 7.7% in 1989. The recovery was led by foreign demand for Malaysia's exports, with net exports accounting for more than three-quarters of growth. Domestic consumer spending and private investment are taking longer to pick up, and unemployment has risen to 9.1%.

The strong export performance in 1987-1988 resulted in Malaysia's first current account surplus since 1979. Combined with strong foreign direct investment, the improved external account allowed Malaysia reduce its foreign debt from $19.6 billion 1986 to an estimated $17.5 billion in 1990

Malaysia's prospects for continuing growth and prosperity are good. It possess abundant resources and land, a well educated work force, and a stable political environment. Strong domestic savings provide adequate funds for investment, and

Malaysia remains attractive to foreign investors. Rising currency values in Taiwan and South Korea have heightened Malaysia’s competitive position in the region. The economy, however, remains vulnerable to external shocks. Exports account for 70% of GNP and a prolonged recession in the industrial economies would have severe repercussions for the country.

Concepts for Review

Basic education	Manpower planning
Brain drain	Nonformal education
Derived demand	Opportunity cost of education
Dropout rate	Overeducation
Educational certification	Private benefits of education
Educational gender gap	Private costs of education

Enrollment ratios	Quotas
Formal educational system	Social benefits of education
Human resources	Social costs of education
Literacy	

Questions for Discussion

1. What reasons would you give for the rather sizable school dropout rates in Third World countries? What might be done to lower these rates?
2. What are the differences between formal and nonformal education? Give some examples of each.
3. It is often asserted that Third World educational systems, especially in rural areas, are "dysfunctional," that is, unsuited to the real social and economic needs of development. Do you agree or disagree with this statement? Explain your reasoning.
4. How would you explain the fact that relative costs of and returns to higher education are so much higher in LDCs than in developed countries?
5. What is the supposed rationale for subsidizing higher education in many Third World countries? Do you think that it is a legitimate rationale from an economic viewpoint? Explain.
6. Early childhood environmental factors are said to be important determinants of school performance. What are some of these factors, how important do you think they area, and what might be done to ensure that these factors are not negative?

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7. What do we mean by the economics of education? To what extent do you think educational planning and policy decisions ought to be guided by economic considerations? Explain, giving hypothetical or actual examples.
8. What is meant by the statement "The demand for education is a 'derived demand' for high-paying modern-sector job opportunities"? Many educational specialists claim that families and children in LDCs demand education not so much as an investment good but as a consumption good. What do you think this statement means and what do you think is the relative importance of the consumption demand for education among your student friends?
9. What are the links among educational systems, labor markets, and employment determination in many Third World countries? Describe the process of educational job displacement.
10. Distinguish carefully between private and social benefits and costs of education. What economic factors give rise to the wide divergence between private and social benefit-to-cost valuations in most developing countries? Should governments attempt through their educational and economic policies to narrow the gap between private and social valuations? Explain.
11. Describe and comment on each of the following education-development relationships:
    a. Education and economic growth: Does education promote growth? How?
    b. Education, inequality, and poverty: Do educational systems typical of most LDCs tend to reduce, exacerbate, Or have no effect on inequality and poverty? Explain with specific reference to a country with which you are familiar.
    c. Education and migration: Does education stimulate rural-urban migration? Why?
    d. Education and fertility: Does the education of women tend to reduce their fertility? Why and how?
    e. Education and rural development: Do most LDC formal educational systems contribute substantially to the promotion of rural development? Explain.
    f. Education and the brain drain: What factors cause the international migration of high-level educated workers from LDCs to developed countries? What do we mean by the internal brain drain? Explain, giving examples.
12. Governments can influence the character, quality, and content of their educational systems by manipulating important economic and noneconomic factors or variables both outaide of and within educational systems. What are some of these external and internal factors, and how can government policies make education more relevant to the real meaning of development?

Notes

1. Frederick H. Harbison, *Human Resources as the Wealth of Nations* (New York: Oxford University Press, 1973), p. 3. See also Theodore W. Schultz, "Investment in human capital," *American Economic Review* 51 (March 1961).
2. For a counterargument stressing the broad economic benefits of a continuous expansion of formal education (though not denying its often antiegalitarian results), see George Psacharopoulos, "Education and development: A review," *World Bank Research Observer* 3 (January 1988): 99-116; also see Wadi D. Haddad et al.. *Education and Development: Evidence for New Priorities,* World Bank Discussion Paper No. 95 (Washington D.C.: World Bank, 1990).
3. For an additional analysis and profile of education, see Psacharopoulos, "Education and development."
4. George Psacharopoulos, *The Returns to Education: An International Comparison* (Amsterdam: Elsevier, 1972), and ibid.
5. Alain Mingat and J. P. Tan, "On equity in education again: An international comparison," *Journal of Human Resources 20* (Spring 1985): 298-308.
6. For a detailed review of the empirical studies of rates of returns to investment in education, see George Psacharopoulos, "Returns to education: An updated international comparison," *Comparative Education* 17 (June 1981), and Christopher Colclough, "The impact of primary schooling on economic development: A review of the evidence," *World Development* 10 (April 1982). According to George Psacharopoulos, "Education as investment," *Finance and Development* (September 1982), p. 40:

   > Estimates of the private rate of return to a given level of education are calculated by comparing the discounted benefits over the lifetime of an educational investment "project" to the costs of such a project. Thus, for a calculation of the private rate of return to four years of university education, benefits are estimated by taking the difference between existing statistics on the mean post-tax earnings of university graduates by age and those of a sample group of secondary school graduates. The earnings of the latter also represent the opportunity costs of staying in school. Direct costs are obtained from statistics on a student's out-of-pocket expenditures that are strictly due to the costs of college attendance. Given these data, the rate of return to investment in a college degree compared with a secondary school qualification is the rate of interest that reduces to zero the net present value of the discounted difference between the costs and benefits. A simple equation for the private rate of return is

$$\text{Private rate of return} = \frac{\left(\begin{array}{l}\text{Mean annual post-tax}\\ \text{earnings of}\\ \text{university graduates}\end{array}\right) - \left(\begin{array}{l}\text{Mean annual post-tax}\\ \text{earnings of secondary}\\ \text{school graduates}\end{array}\right)}{\left(\begin{array}{l}\text{Four}\\ \text{years}\\ \text{of study}\end{array}\right) \times \left(\begin{array}{l}\text{Mean annual post-tax}\\ \text{earnings of second}\\ \text{school of graduates}\end{array}\right) + \left(\begin{array}{l}\text{Mean annual}\\ \text{private direct}\\ \text{cost of study}\end{array}\right)}$$

   A social rate of return to college education could be calculated in the same way, although earnings should be pretax (as taxes are a transfer from the point of view of society at large) and the direct cost should include the full amount of resources committed per student for higher education, rather than the usually smaller part of expenditure borne by the student.

7. Jere Behrman and Nancy Birdsall, "The quality of schooling: Quantity alone is misleading," *American Economic Review* 73 (December 1983): 928-946.
8. Haddad et al., *Educatum and Development,* pp. 12-15.
9. Much of the material in this section is drawn from Michael P. Todaro and Edgar 0. Edwards, "Educational demand and supply in the context of growing unemployment *m* less developed countries," *World Development* I (March/April 1973).
10. In fact, because most expectations for the future tend to be based on a static picture of the employment situation that currently prevails, we might anticipate that when the employment situation is worsening, individuals tend to overestimate their expected incomes and demand even more education than is justified in terms of "correct" private calculations of benefits and costs.
11. For an estimate of the private direct and opportunity costs of primary, secondary, and postsecondary education in the 1980s, see Emmanuel Jimenez, "The public subsidization of education and health in developing countries: A review of equity and efficiency," *World Bank Research Observer* I (January 1986), tab. 6.
12. For a penetrating analysis of the Indian education and employment problems, see Marc Blaug et al.. *Causes of Graduate Unemployment in India* (Harmondsworth, England: Penguin, 1967).
13. R. Islam, "Graduate unemployment in Bangladesh: A preliminary analysis," *Bangladesh Development Studies* (Autumn 1980): 47-74.

14. For evidence of this, see Jimenez, "Public subsidization," p. 123.
15. See, for example, Edward F. Denison, *The Sources of Economic Growth in the United States* (New York: National Bureau of Economic Research, 1962), and Robert Solow, "Technical change and the aggregate production function," *Review of Economics and Statistics* (August 1957).
16. Psacharopoulos, "Education and development," 100-102.
17. See, for example, Jagdish N. Bhagwati, "Education, class structure and income equality," *World Development* I (May 1973), and Jimenez, "Public subsidization."
18. John Simmons, *Education, Poverty and Development,* World Bank Staff Working Papers No. 188 (Washington, D.C.: World Bank, 1974), p. 32.
19. For some evidence of the regressive nature of educational subsidies in Latin America, see Jean-Pierre Jallade, *Public Expenditures on Education and Income Distribution in Colombia* (Baltimore, Md.: Johns Hopkins Universify Press, 1974), and Basic *Education and Income inequality in Brazil: The Long-Term* View, World Bank Staff Working Papers No. 268 (Washington, D.C.: World Bank, 1977).
20. For evidence of this in the case of Tanzania, see H. N. Barnum and R. H. Sabot, *Migration, Education and Urban Surplus Labor,* OECD Development Center Employment Series Monograph (mimeograph), October 1975.
21. See World Bank, *World Development Report, 1991* (New York: Oxford University Press, 1991), box 3.2.
22. Philip H. Coombs and Manzoor Ahmed, *Attacking Rural Poverty: How Nonformal Education Can Help* (Baltimore, Md.: Johns Hopkins University Press, 1974), p. 17.

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23. As in other chapters, the policies put forward here are designed primarily to stimulat group discussion and individual analysis. Although in our opinion they are sensibi policies with a solid economic rationale, they should not be viewed as absolute immutable, or beyond challenge.
24. For an analysis of the problem, see Jagdish Bhagwati and William Dellalfar, "fh brain drain and income taxation," *World Development* I (January 1973): 94-101- see also the entire September 1975 issue of the *Journal of Development Economics,* which was devoted to the subject of the international brain drain, and the discussion of recent trends in United Nations Development Program, *Human Development Report 1992* (New York: Oxford University Press, 1992), pp. 54-58.
25. For an interesting analysis of alternative mechanisms for financing higher education see Alain Mingat and J. P. Tan, "Financing public higher education in developing countries: The potential role of loan schemes," *Higher Education* 15 (September 1986)283-297.

Further Reading

For an informative general approach to the study of education and human resource development, see Frederick H. Harbison, *Human Resources as the Wealth of Nations* (New York: Oxford University Press, 1973).

Excellent surveys of economic issues relating education to development can be found in John Simmons, "Education for development reconsidered," *World Development 7* (1979): 1005-1016; Marc Blaug, *An Introduction to the Economics of Education* (Harmondsworth, England: Penguin, 1970); George Psacharopoulos and Maureen Woodhall, *Education for Development: An Analysis of Investment Choices* (New York: Oxford University Press, 1987); World Bank, *The financing of Education in Developing Countries: An Exploration of Policy Options* (Washington, D.C.: World Bank, 1986), and Wadi D. Haddad et al., *Education and Development: Evidence for New Priorities,* World Bank Discussion Paper No. 95 (Washington D. C.: World Bank, 1990).

A good review of the empirical research on the economic returns to investment (both private and social) in education can be found in George Psacharopoulos, "Returns to education: An updated international comparison," *Comparative Education* 17 (June 1981): 221-241; and "Education and development: A review," *World Bank Research Observer* 3 (January 1988): 99-116; an alternative view focusing on the quality rather than quantity of education is contained in Jere Behrman and Nancy Birdsall, "The quality of schooling: , Quantity alone is misleading," *Afnerican Economic Review* 73 (December. 1983):'.928-946.

For a broad analysisofhoweducationcanpromtiteruraldevelopment,see Philip H. Coombs and Manzoor Ahmed, *Attacking Rural Poverty: Hem Nonformal Education Can Help* (Baltimore, Md.: Johns Hopkins University Press, 1974).

A challenging and critical view of the role of education in society can be found in Ivan Blich, *Deschooling Society* (New York: Harper & Row, 1970), and also in Ronald Dore, *The Diploma Disease* (Berkeley: University of California Press, 1976).

A good summary of the issues involved in the question of education and inequality can be obtained from Jagdish N. Bhagwati, "Education, class structure and income equality," *World Development* I (January 1973); and Alain Mingat and J. P. Tan, "On equity in education again: An international comparison," *Journal of Human Resources* 20 (Spring 1985), and "Who profits from the public funding of education: A comparison by world regions," *Comparative Educatim* 22 (June 1986).

Finally, a multidisciplinary approach to education and development well worth reading can be found in F. Champion Ward (ed.). *Education and Development Reconsidered* (New York: Praeger, 1974).