ANE BUREAU

HUMAN RESOURCES INVESTMENT

STRATEGIES FOR PRIMARY EDUCATION

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EXECUTIVE SUMMARY

This paper identifies investment opportunities and program strategies for primary or basic (the two terms are used interchangeably) education (I-9) in seven of A.I.D.'s ANE countries: Jordan, Morocco, Tunisia, Thailand, Philippines, Indonesia and Sri Lanka. The first five are Lower Middle Income Countries (LMIC's See Appendix 1 - Definitions). The last two are included because of their relatively advanced education systems.

These Asia and Near East countries have almost achieved universal primary enrollment and have demonstrated solid growth patterns. Currently, they are embracing economic development strategies that require a workforce skilled in literacy and numeracy, and capable of being further trained (or retrained) to respond to highly complex markets and economic changes. However, there is evidence that LMIC human resource needs are not being met and that continued economic growth is threatened. This paper therefore identifies essential investments in basic education to maintain skilled workforces and to obtain management and administrative skills needed for continued economic growth.

Eight program strategies are listed for possible mission implementation. These include: (1) **policy dialogue** between the missions and the host country private sector, education reformers, and government personnel within and outside the Ministry of Education; (2) **assessments** regarding national achievement levels and targeted **studies** for policy and project development; (3) discrete **activities** that focus on pressing constraints, particularly as they relate to quality; (4) collaboration with the **Peace Corps,** particularly in rural schools and English language development; (5) **donor collaboration** in countries where other donors are taking the lead role in educational development; (6) **buy-in** activities to centrally funded AID projects; (7) **participant training** and linkages between university faculties of education in the host country and those in the U.S.; and (8) **projects** in basic education. A **combination** of two or more strategies could also be undertaken.

It is argued that AID should have a presence in basic education in the LMIC's even though most have achieved universal enrollments at the primary level to assure continued economic growth. Manpower needs in these countries are changing rapidly as science and technology take a more pronounced role in the economy. Value added agriculture is becoming the main source of production as efforts and resources increasingly concentrate on production in manufacturing and on expanding services. The LMIC's have been consuming and repairing modern goods in electronics, computers, telecommunications and other areas, and now are beginning to produce for export. In addition, their wholesale and retail trade, banking and manufacturing systems are modernizing with the introduction of computers and related forms of technology. These countries need skilled manpower to sustain and accelerate their development into the twenty-first century.

Basic education that enables students to master literacy and numeracy skills, and to complete their schooling increases the pool of skilled manpower. By learning basic competencies of literacy and numeracy, the school graduates are trainable and can

learn more skills more quickly and better than less educated people. In addition, successful school graduates are more adaptable in the work force than non-graduates. Thus, the more educated workers are more flexible -- a key ingredient in a workforce where new technologies are introduced quickly and change rapidly, and where quick response by labor to market shifts is imperative if productivity is to be sustained.

The major education constraint endemic to the LMIC's is the decline in student learning. Other constraints include: school inefficiencies as measured by high repetition and dropout rates; overly centralized administrative systems with deficient field management; weak linkages between schooling, training and employment; and uneven funding for basic education accompanied by excessive funding for higher education. These constraints are also detailed in country-by-country profiles.

Basic education investment opportunities for LMIC's are:

FINANCIAL STRENGTHENING

1. Efficiency in Education Expenditures - More efficient use of education expenditures through reforms in the Ministry of Education.

2. Post-primary Education - Reduce dependence on public resources for post-primary education.

3. Central Government Allocations - Reallocate government expenditures to education from other sectors.

4. Tax Policy - Encourage private sector investment in education through tax policies.

5. Local Resources - Mobilize additional resources through reform in tax policy and local governance.

STRENGTHENING SCHOOL, TRAINING AND EMPLOYMENT LINKAGES

1. Employer Initiatives - Encourage employers to collaborate with schools to boost student achievement.

2. School Initiatives - Prepare students for training and employment opportunities through orientation, testing, counselling, field visits, and apprenticeship programs.

3. Training Initiatives - Make training a responsive, flexible and effective intermediary between schooling and employment.

WIDENING ACCESS

1. Female Enrollment - Enroll and retain more girl students by distributing women teachers and all girls' schools more widely--particularly in rural areas.

2. Choice/Private Schools - Encourage larger private school enrollments through appropriate "choice" policies.

3. Construction and Renovation - Integrate tax and other incentive programs to strengthen private sector activities with legitimate government public sector investments.

4. Multigrade Classes - Prepare teachers to manage more multigrade classrooms.

5. Junior Secondary Schools - Where needed, initiate a development program for junior secondary schools.

DECENTRALIZATION AND MANAGEMENT IMPROVEMENT

1. School Autonomy - Strengthen the authority of field supervisors and principals through appropriate administrative directives and management training.

2. Enhancing Teacher Status - Attract and retain better teachers by strengthening incentives, increasing staff development and raising qualifications.

3. Input Delivery - Streamline bureaucratic channels to accelerate the delivery of materials and services to schools.

4. Evaluation - Incorporate national assessment and evaluative research into national programs in basic education.

IMPROVING QUALITY AND EFFICIENCY

1. Effective Schools - School officials must set high academic and administrative standards.

2. Texts and Materials - Ensure texts and materials are integrated with curriculum content and that the private sector has a role in text publication and distribution.

3. Curricula - Emphasize and upgrade (if necessary) science and mathematics components of the general curriculum.

4. Instruction - Improve and vary instructional methods to include all students in the teaching-learning process.

5. Teacher Training - Emphasize practice teaching in pre-service training as well as flexible forms of in-service training.

Finally, the paper provides guidance to Missions for analyzing constraints to primary education, identifying investment opportunities for overcoming these constraints, and developing AID program strategies to implement these investment opportunities. Three formats are provided for Mission use.

1.0 INTRODUCTION

1.1 BACKGROUND

In late 1988, the Bureau for Asia, Near East and Europe (ANE) of the Agency for International Development (AID) contracted a paper, "Basic Education in the ANE Bureau--Options for FY 89-91." While the paper addressed the status and constraints to basic education in general as well as in each of the 15 countries in the ANE region, the thrust of the recommended activities for the Bureau lay with the poorer developing countries, particulary Bangladesh, Nepal, and Afghanistan. Little attention and priority was given to the more advanced or Lower Middle Income Countries (LMIC's) in the region, such as Jordan, Thailand or Morocco. It was felt within the Bureau that these countries should receive equal attention, although the problems and recommended activities would no doubt be different.

Therefore, this paper focuses solely on the LMIC's regarding the problems and priorities for assisting basic education. As in the initial paper, primary education is defined here as the minimal level of knowledge, skills and attitudes needed to function in a modern society. Usually it refers to formal schooling for children between ages 6-14 or grades 1-9. (In this paper, the terms primary education and basic education are used interchangeably.) It consists fundamentally of literacy and numeracy, as well as general and practical knowledge and skills about one's natural and social environment.

The LMIC countries are: Philippines, Thailand, Morocco, Tunisia and Jordan. Indonesia and Sri Lanka were also included because progress in their education systems suggest the possibility of implementing innovative activities in basic education.

1.2 PURPOSE AND ANALYTICAL FRAMEWORK

The general purpose of this study is to assist missions in the review, formulation and development of AID basic education programs in the Lower Middle Income Countries. Specifically, it is to:

A. stimulate thinking by the missions about basic education in their countries, particularly regarding the ways in which missions can initiate public and private coalition-building efforts;

B. enable missions to assess constraints to basic education within their host country and in their human resource development program;

C. help missions identify investment opportunties to address these constraints, and to;

D. guide missions in the formulation of program strategies to implement the educational options.

The structure of the paper follows this four-part purpose. The paper draws from secondary sources mostly conducted by AID, World Bank and international researchers; no field work nor visits were conducted.

The following questions logically relate to one another to form an analytical framework. Each question summarizes a critical educational category; access, internal efficiency, quality, organization, external efficiency (training and employment), and costs or expenditures:

- Are all children enrolled in schools which provide a basic education? (access)

- Do children complete this education? Do they do so within the required time period? (internal efficiency)

- Do children master basic knowledge and skills? (quality)

- Do children learn in a well managed system? (management)

- Does basic education prepare children for further education, training or the world of work? Do graduates enter the labor market with skills, or as being "trainable"? (employment linkage)

- Is basic education provided at the least possible cost? (costs)

These questions and categories comprise the analytical framework and focus the analysis of constraints and educational opportunties in sections three and four respectively. The categories as well as the term, Lower Middle Income Countries, are defined in Appendix I.

2.0 RATIONALE

With such high primary and secondary school enrollments in LMIC's (Table 1), why should AID continue to invest in assisting their basic education? The response, simply, is that while access to and participation in basic education in these countries are high, the quality, efficiency and effectiveness are declining. (This will be discussed in the next section). Without maintenance of acceptable levels of quality and efficiency in basic education, the targeted LMIC's will have difficulty meeting manpower needs--particularly in the burgeoning and promising areas of science and technology as they relate to the industrial and service sectors of the economy. As a result, overall productivity will stall or decline.

While basic education does not prepare individuals directly for the market place by providing them with occupational or trade skills, it prepares them indirectly by developing their cognitive competencies. With these competencies, individuals can then learn a range of skills more efficiently. Basic education enables them to be more trainable so that they can acquire skills in a particular job area; so that they can acquire more

complex skills in that area; and most importantly in the rapidly growing economies of the LMIC's, so that they can be flexible to acquire new skills in different job areas. Without a growing pool of trainable labor, it will be difficult for the LMIC's to sustain growth by meeting the more sophisticated and complex manpower requirements needed to fuel the expanding technological, industrial and entrepreneurial components in their economies.

2.1 CHANGING MANPOWER NEEDS

With the exception of the Philippines, the seven countries under discussion have a GDP growth rate for the years 1980-1987 well above the average (2.8%) GDP growth rate of all Middle Income Economies. Their GDP growth rates are: Sri Lanka--4.6%, Indonesia--3.6%, Morocco--3.2%, Thailand--5.6%, Tunisia--3.6%, Jordan--4.3%, and Philippines--0.5%. (World Development Indicators, Table 2-Growth of Production in World Development Report 1989).

This means the creation and increase of new jobs as businesses develop and expand through increased foreign and domestic investment and the overall growth of the private sector. The agricultural base of production grows increasingly complex as agribusiness and food processing components complement the production of long-term commodities. Relatively new industries of electronics, telecommunications and computer assembly or manufacturing demand more skilled labor.

Science and technology is increasingly a driving force in the LMIC economies. Indonesia, for example as the largest country under discussion, is dependent on it to sustain its oil, Liquid Natural Gas, mining and energy industries all of which require growing numbers of skilled and highly skilled labor. Joint ventures between foreign businesses--especially those from Japan, Korea, Taiwan and Hong Kong--and those in the Southeast Asian LMIC's have generated a host of new industrial and business activities. In fact the former are contracting some of the labor-intensive production of new technologies to the Southeast Asian LMIC's so that consumer electronic export production is now moving to Indonesia, Thailand, Philippines and Malaysia. Again in Indonesia, the aircraft company IPTN is moving from aircraft assembly to design and manufacture with companies from Spain, West Germany, Great Britain and USA. (Currently, it is discussing with General Dynamics a subcontract to complete manufacture of F-16's at the Bandung plant.) All of these changes require new and more sophisticated jobs and operations in subsidiary businesses, and in marketing and distribution efforts. Also introduction of computers in such services as banking, insurance and wholesale and retail trade are changing dramatically the organization of these industries and employee work patterns.

Related to job expansion, occupational complexity, and technological and industrial development is the necessity to make the financial systems more efficient. In fact the World Development Report 1989 calls for a restructuring of financial systems in the developing world to release market forces in the private sector for more competitive and flexible economies. Commercial banks need to improve their management, to upgrade their staff through training, and to develop better data and information technologies. Nonbank financial institutions such as finance, insurance and venture capital companies

must broaden and improve their operational efficiency and marketing activities. Informal financial arrangements through money lenders, tradespeople and associations need more recognition and support as well as regulation from the banks to be integrated into the larger financial system. As with technological developments, structural adjustment of the financial system requires an educated, aware and skilled population if it is to work and sustain overall growth. This includes not only the financial specialists, bankers, accountants and investors, but the small businessmen, farmers and retailers. Ultimately, it includes the consumers of loans, credit, and investments who need to know how to make prudent and knowledgable choices.

2.2 SCHOOLING AND PRODUCTIVITY

Effective basic education will dramatically boost productivity. Schooling contributes to development by building cognitive competencies in students, e.g., literacy, numeracy, a worldly awareness, and problem solving behaviors. These competencies in turn enable them to be more productive. If schools educate many children effectively, development accelerates; if they do so ineffectively, development is not as likely to accelerate (if it does so at all). Therefore improving the effectiveness of schools so that all children acquire these competencies as defined by the curriculum will accelerate or at least maintain the pace of development.

For the past few decades research has demonstrated that schooling--particularly primary schooling--contributes to agricultural and general productivity among other benefits. A few studies, however, have isolated the effect of the cognitive competencies of literacy and numeracy from the effects of the length of schooling, its credentialing, and individual aptitude on productivity. For example, one study in Kenya and Tanzania among urban wage earners found that the impact of secondary schooling on wages was nearly entirely explained by literacy and numeracy skills while statistically controlling for length of schooling and employment as well as for aptitude. "It appears that literate and numerate workers are more productive, and that education is valuable to workers because it can give them skills that increase their productivity (Boissiere et al. 1985:1029)." Literacy and numeracy have similar effects on farmer productivity in Nepal (Jamison and Moock 1984) and in Thailand (Jamison and Lau 1982).

While literacy and numeracy skills are the fundamentals of cognitive competencies, schools must develop higher order skills to be really effective. A basic education should enable a student to "learn how to learn"; that is, a student becomes empowered to cope with unfamiliar situations because he learns from one problem something that improves his performance on another problem where the specific cues are quite different. In effect, literacy, numeracy and related knowledge and skills become a foundation for further learning so that a student applies fundamental skills to new and more complex problems. At this stage the child reaches the problem solving level which is essential for productive behavior throughout life. This is the primary goal of basic education.

Many experts believe that the worker with a higher level of education is more trainable than one with a lower level, and thus can work more productively. In addition, the former is more adaptable in the work force than the latter, and thus can learn different

jobs more quickly. The more educated worker is more flexible than the less educated one. This is important in workforces where new technologies are introduced quickly and change rapidly to increase production and respond to market shifts.

In effect, the more educated worker learns more skills, more quickly, and better than the less educated one.

2.3 INNOVATION

As will be discussed below, most LMIC's are currently struggling with problems of quality and efficiency: how can students learn more effectively and complete their schooling in the required time at lowest possible cost? It is argued here that innovative, different and more challenging ways of training teachers, instructing students, managing school systems, financing operations, making policies and planning programs are needed. Moreover, the LMIC school systems and their personnel are probably ready for these measures when they would not have been so a decade or two ago. Need and readiness are two essential prerequisites for the likelihood of any innovation to take hold. Since they exist now in the LMIC education systems, AID should seize the opportunity to introduce bold and innovative ways to improve the quality and efficiency of education in these systems.

2.4 A.I.D.'S COMPARATIVE ADVANTAGE IN EDUCATION

AID has a comparative for assistance to basic education in developing countries. While the United States has been facing its own educational problems in terms of declining achievement and rising dropouts, it is on the forefront of educational reform. The recent "American Education Summit" at Charlottesville, VA in October, 1989, explored key reform issues such as parental choice in schooling, coalition-building between business and education groups, on-site management, a more rigorous and challenging curriculum, and tax restructuring. Clearly these issues are relevant to the LMIC's as well. The United States is also on the forefront of educational research and technology development for public education. This includes curriculum development, instructional alternatives, testing and learning technologies. In addition, over half of all educational research and development conducted in Third World Countries is conducted by American researchers and institutions. AID has over thirty years experience in designing, implementing and evaluating education and training projects in many different countries and socioeconomic contexts in the Third World.

3.0 CONSTRAINTS TO BASIC EDUCATION

This section addresses the constraints to basic education that the seven countries under discussion share in varying degrees. First the constraints will be introduced through a general discussion of Education Indicators for the countries. Then these constraints will be discussed on a country by country basis. Finally, an attempt will be made to lend a sense of priority to these constraints.

3.1 EDUCATIONAL INDICATORS

Table 1 -- Education Indicators of the LMIC Countries in the ANE Region -- discusses six constraints: access, internal efficiency, expenditures, quality, organization and management, and employment linkages.

(i) Access

Access is a problem only for Morocco. Other LMIC's reached or nearly reached national coverage of primary education, and with the exception of Thailand and Morocco are progressing in secondary enrollments. Generally the gender enrollments are equal for the Asian countries, while female enrollments lag behind male enrollments in the Arab countries. In addition, the student teacher ratios at both levels are favorable, though more so at the primary than at the secondary levels. Interestingly, Indonesia and to some extent Thailand, are the only countries to have a substantial proportion of students attending private schools.

(ii) Efficiency

LMIC internal efficiency performance is not favorable. Almost one third of the students from Indonesia and the Philippines fail to reach sixth grade, while the repetition rates in Morocco and Tunisia are very high at 22% and 20% respectively. In fact Morocco has a 50% repeater rate at the fifth primary year -- the highest reported incidence of inefficiency due to class repetition of any public school system. The Philippines have a high incidence of dropouts at the primary level with the dropouts concentrated among the economically disadvantaged students. Thus, despite the high enrollment rates demonstrating a wide access to primary education, uneven repetition and dropout rates suggest that a significant proportion of students -- at least in Morocco, Tunisia and the Philippines - either do not complete their primary education; or if they do, they do so in a longer time than the required five or six years. For example, in Morocco, the average number of years of instruction for each graduate of five year primary cycle is 8.6 years; and of the six year cycle in the Outer Islands of Indonesia, it is 8.3 years.

TABLE 1: EDUCATION INDICATORS OF LMIC COUNTRIES 1989

EDUCATION INDICATORS	LMIC COUNTRIES IN THE ANE REGION							
	INDO	PHIL	THAI	JORD	MORC	TUNS	SLAN	LMIC
COUNTRY WIDE								
1. Population in millions	171	58	54	3.8	23	7.6	16	---
2. GNP per capita (US$)	450	590	850	1560	610	1180	400	1200
3. Adult literacy (%)	67	83	88	65	40	62	87	----
ENROLLMENTS (ACCESS)								
4. Primary (gross) enrollments (%)	118	106	99	92	79	118	103	104
5. No. of primary students per teacher	26	31	21	32	27	32	16	31
6. Percentage of primary students enrolled in private schools	17	6	9	7	3	1	2	7
7. Secondary enrollments (%)	41	68	29	69	34	39	66	51
8. No. of secondary students per teacher	26	36	18	38	32	18	--	22
9. Tertiary enrollments (%)	7	38	20	10	9	6	4	17
EFFICIENCY								
10. Completion rate for primary cycle (%)	72	70	81	112	88	91	95	78
11. Repeaters as % total primary enrollment	9	2	8	5	22	20	9	11
12. Progression rate from primary to secondary (%)	76	89	44	--	61	27	--	--

TABLE 1 EDUCATION INDICATORS OF LMIC COUNTRIES (cont.)

EDUCATION INDICATORS	LMIC COUNTRIES IN THE ANE REGION							
	INDO	PHIL	THAI	JORD	MORC	TUNS	SLAN	LMIC
EXPENDITURES								
13. Percentage of GNP spent on education	2.1	2.8	3.4	4.9	6.8	5.6	3.5	3.7
14. Education expenditures as % of total government expenditures	8.8	18	19	14	17	16	7.8	13
15. Education recurrent expenditures allocated to:								
primary	70	55	59	19	35	47	--	41
secondary	24	21	14	44	47	37	--	26
tertiary	6	24	10	18	18	18	--	22

NOTE: The source for Indicators Nos. 1,2,4,7,9, and 14 was the World Development Indicators in the **World Development Report 1989**. A less up to date but comprehensive source is the **World Education Indicators** by Andre Komenan, 1987 and was the source for Indicators Nos. 3,5,6,8,10,11,12,13, and 15.

The data in the extreme right column are weighted means from all the 34 Lower Middle Income countries with per capita incomes between $520 and $1930. As such, they serve as a crude standard for the performance of each country. According to this World Bank classification, Sri Lanka and Indonesia are Low Income countries, but for purposes of this study, they are included as Lower Middle Income countries. The blanks indicate the data were unavailable.

The enrollment data are the total enrollment of all ages divided by the population of the specific age groups which correspond to the age groups in the different levels of education. The gross enrollment ratio includes pupils of all possible ages, whereas the population is limited to the range of official school ages. Therefore, for countries with almost universal enrollment among the school age population, the gross enrollment ratio will exceed 100 if the actual age distribution of pupils is wider than the official school ages.

(iii) Expenditures

The expenditure profile is uneven. If percentage of GNP spent on education is a measure of a country's commitment to fund and develop education, then educational development in the Philippines, and particulary in Indonesia, is underfunded. If the percentage of the government budget spent on education is another measure, then education development in Sri Lanka and again in Indonesia is underfunded. Otherwise, the LMIC countries appear to be funding education adequately. When recurrent expenditures are broken down by level of education, only Morocco and Jordan are underfunding primary education. This is noted as a serious issue in the country profile of Morocco (3.2). Generally, however, the LMIC countries recognize primary education as the highest priority.

(iv) Quality

Information on quality outputs as measured by student achievement or on quality inputs (teacher qualifications, distribution of texts, etc.) is not uniformly available. Achievement measures will be reported for Thailand and the Philippines below; but for the other countries the evidence regarding quality is impressionistic. Therefore quality will be discussed only in general terms.

The declining quality of primary education in LMIC's is of major concern. The Philippines and Thailand have national and international assessment data which demonstrate that their primary students perform below acceptable standards in all curricular areas, and particularly so in mathematics and science. There is similar concern in Indonesia, but without recent assessment data. While the evidence of declining student mastery of curricular knowledge and skills in the other countries is impressionistic, it nevertheless is cause of widespread concern. In addition, attention in Sri Lanka, Tunisia and Jordan focuses on teacher training and school instruction, the curriculum, the selective examinations, and school buildings.

Reports of each country convey two critical questions:

- are a sufficient number of students mastering the basic knowledge and skills related to literacy and numeracy?

- does the curriculum contain up-to-date and sufficient amounts of mathematics and science?

If the answer is no in both cases, the labor force in the LMIC countries will not be prepared in the Twenty-first Century to respond to the demands of technological change. Nor will the countries have a sufficient and sizeable educated pool from which scientists, technicians and engineers can be trained. Lack of attention to the expansion and upgrading of scientific and technical education--particulary at the secondary level--will impede overall development. While advances in technology creation and adoption depend on many factors such as organizational flexibility, managerial effectiveness,

risk-taking, and access to capital markets, a high ratio of scientists and engineers to the overall population is probably the single most important factor in technology development (Rosenberg 1982).

(v) Organization and Management

Problems with organization and management of basic education are a major concern in all countries. These are: (a) limited autonomy, responsibility, and management capability at the school level; (b) the declining status of teachers; (c) the inability of administrative systems to provide quality inputs at the school level and (d) weak systems for achievement testing, monitoring and evaluative research.

First, the rapid expansion of primary and secondary schools in the past two decades combined with the tendency to control funding and expenditures from the center, has led increasingly to the centralized management of education. This has restricted local supervisors, principals and teachers from making decisions and managing schools on their own. As a result the freedom and incentives for innovation and alternative approaches to teaching, managing and testing at the school level are limited.

Second, the same expansion necessitated recruitment of more teachers, many of whom lacked proper qualifications. As more opportunities opened up in the public and private sectors for secondary school graduates, teaching as a profession lost the attraction and prestige it once had in the sixties. Hence, teachers' salaries are often not much higher than those of low level bureaucrats or mechanics. In addition, few incentives exist to attract good teachers to rural areas where they are most needed.

Third, bureaucratic growth and preoccupation with routine administrative duties have constrained Ministries of Education from providing adequate technical, managerial and supervisory support and assistance. Again, rural schools receive uneven support in the way of curricular guidance, textbooks and materials delivery, instructional assistance, and management development.

Fourth, weak testing and monitoring systems have constrained research units in the Ministries from having adequate information on achievement levels of students, on the impact of curricular interventions and policy directives, and on the skill levels and orientations of teachers. This constraint makes it difficult for the research units to conduct evaluation and reviews regarding such basic things as student flows and achievement performance--all of which are necessary to formulate accurate and effective regulations and policies. In addition, without this basic information, these LMIC countries cannot be compared with other countries which have data on these matters.

(vi) School, Training and Employment Linkages

While basic education does not--and should not--provide vocational training, its development and reform (in the case of Tunisia, Morocco and Jordan) have training and employment implications. The highly structured and academic curriculum in Sri Lanka brings this out clearly: while all students want the opportunity to pursue academic study,

many know that they will not continue after grade 9, and all but a few know they will not continue after grade 11 (or its equivalent).

However, there is a little, if any, orientation done through testing, questionnaires or counselling to sensitize students to their strengths and weaknesses in knowledge, skill and aptitude areas which are not part of the school curriculum. Nor is there much articulation between schools and training centers to enable schools to orient those who are not continuing their education to the world of work. Tunisia appears to be the only country where training activities are envisioned to complement and to be coordinated within the school curriculum. In cases where vocational or pre-vocational courses in lower secondary schools are disbanded because of the development of a common curriculum (Tunisia) for basic education, provisions need to be made to transfer courses and vocational training equipment to vocational training institutions. Finally, there is little focus on coalition-building between school and private sector agencies to tighten linkages between education and employment.

(vii) Progress

When INDICATORS for 1989 (Table 1) are compared with those for 1975 (Table 2), the LMIC's show considerable progress. This is most apparent in the GNP per capita which on the average has almost doubled. Access as measured by enrollments has improved dramatically at the primary level with near universal coverage--Morocco being the exception. Secondary enrollments also show substantial increases with the exception being Thailand. Efficiency also shows progress with a marked improvement in completion rates for the primary cycle (again with the exception of Morocco which actually shows a declining rate.) The repeater rates do not seem to have changed. In terms of expenditures, neither percent of GNP spent on education nor the percent of total government expenditures spent on education has changed much the exception being Indonesia where both decreased. Finally, primary education receives a greater percentage of expenditures compared to secondary and tertiary education except in the Arab countries.

TABLE 2: EDUCATION INDICATORS OF LMIC COUNTRIES 1975

EDUCATION INDICATORS	LMIC COUNTRIES IN THE ANE REGION							
	INDO	PHIL	THAI	JORD	MORC	TUNS	SLAN	LMIC
COUNTRY WIDE								
1. Population in millions	135	43	43	2.8	17	5.7	14	--
2. GNP per capita (US$)	240	410	380	610	540	840	200	750
3. Adult literacy (%)	62	87	82	62	26	55	78	--
ENROLLMENTS (ACCESS)								
4. Primary enrollments (%)	81	105	78	83	61	95	77	--
5. No. of primary students per teacher	29	29	28	35	42	40	16	35
6. Percentage of primary students enrolled in private schools	--	5	--	30	5	1	--	11
7. Secondary enrollments (%)	18	56	25	42	16	20	54	--
8. No. of secondary student per teacher	--	31	27	21	--	23	--	22
9. Tertiary enrollments (%)	2	20	1	4	3	4	1	--
EFFICIENCY								
10. Completion rate for primary cycle (%)	58	70	38	95	94	79	65	62
11. Repeaters as % total primary enrollment	11	--	10	4	28	19	15	10
12. Progression rate from primary to secondary (%)	--	--	--	--	--	--	--	--

TABLE 2: EDUCATION INDICATORS OF LMIC COUNTRIES (cont)

EDUCATION INDICATORS	LMIC COUNTRIES IN THE ANE REGION							
	INDO	PHIL	THAI	JORD	MORC	TUNS	SLAN	LMIC
EXPENDITURES								
13. Percentage of GNP spent on education	2.7	1.9	3.6	5.1	5.1	5.2	--	3.7
14. Education expenditures as % of total government expenditures	13	11	21	8.1	14	16	--	18
15. Education recurrent expenditures allocated to:								
primary	--	66	63	--	40	42	--	44
secondary	--	7	16	86	47	38	84	28
tertiary	--	22	11	4	14	18	7	17

NOTE: The source for Indicators Nos. 1,2,4,7,9, and 14 was the World Development Indicators in the **World Development Report 1975**. A less up to date but comprehensive source was the **World Education Indicators** by Andre Komenan, 1987 and was the source for Indicators No. 3,5,6,8,10,11,12,13, and 15.

3.2 COUNTRY PROFILES

Constraints will now be reviewed on a country by country basis. Data were gathered mostly from the most recent World Bank Staff Appraisal Reports. While the above categories (e.g., efficiency, organization, quality, etc.) will be used, not all will be used for each country. This is because the data are incomplete and not uniform for all of the countries. Hence, the selection and sequence of these categories will vary from country to country

JORDAN

More so than any other of the LMIC's under consideration, Jordan has and must continue to rely upon its human resources for revenue. It lacks natural resources and relies heavily upon imports and the country's prosperity relies largely upon remittances for Jordanians working in the regional labor market and from exports of services. However, Jordan has been losing its comparative advantage in these areas due to changing macroeconomic conditions and to serious deficiencies in its education system.

Although Jordan's education system is impressive quantitatively in terms of enrollment rates, the system's quality is deficient in terms of learning and skill development. Much of the instruction at the primary and secondary levels is characterized by lecture and the learning is characterized by memorization and exam preparation. Instruction and learning sorely lack attention to analytical thinking, rational inquiry and effective problem solving. More specifically the shortcomings lay with the curriculum and textbooks, teaching and teacher training school facilities, and educational research and development.

Curriculum and Textbooks - Overall the primary and secondary curriculum is rigid and outdated. It does not allow adequately for individual differences in learning abilities, and some of the courses (e.g., science and social studies) do not address current environmental and socioeconomic problems in the region. In addition, the courses are not rationalized; for example, the secondary mathematics curricula were developed before those for elementary mathematics. Moreover, textbooks have been developed on an ad hoc basis and are not integrated well with the curriculum.

Teacher and Teacher Training - First, there are an inadequate number of teachers and the majority are underqualified. Unfortunately, this reflects the low prestige of teaching in the eyes of the students, society and the relatively poor earnings teachers can expect. Second, pre-service and in-service training is weak because the quality of teachers is low, and much of training is content based to insure minimum subject matter mastery. Little attention is paid to creative and innovative instructional techniques, analytical thinking, and the mastery of theoretical material. Third, classroom teaching methods are narrow in style and scope with little regard of accommodating the curriculum to individual differences in student learning abilities. Finally, principals are underqualified, being

promoted on the basis of seniority, and so overburdened with administrative tasks that they cannot fulfill an adequate leadership role.

School Facilities - Expanding enrollments have forced the MOE to rent private houses to serve as schools. Conditions are unsatisfactory, and this carries equity considerations with it as many of these rented schools are in the poorer sections of urban areas.

Educational Research and Development - The MOE's General Directorate of Research and Planning is responsible for evaluative work in education. At present it is understaffed and much of the staff is underqualified. It is doubtful whether the Directorate can carry out any substantial evaluative work either of the formative or summative nature.

Proposed Education Reform - The Government of Jordan prepared a comprehensive long-term program to improve all aspects of the country's basic and secondary education system, and the World Bank is expected to provide substantial assistance. The emphasis is upon new policies designed to produce a flexible, knowledgeable and skilled and work force and to provide a critical input to science and technology capacity building. The proposed education reform emphasizes the development of an education system that trains students to think flexibly and critically; to be able to learn new concepts and information; and to apply what they have learned in productive ways.

The reform will improve the quality of teaching and learning through a number of measures. Curriculum development will promote higher cognitive and skill objectives, modernize the content, and be more responsive to individual differences.

Textbook development will support the curriculum. Qualifications for teacher trainers and teachers will be raised, and the training curriculum will be reviewed and upgraded. School buildings will be improved by construction of 180 new schools complete with libraries, labs and other facilities, and the research capacity within the MOE will be strengthened.

The reform will also restructure the school system by extending basic education from nine to ten years with a solid grounding in basic knowledge and skills; by streaming secondary students into groups based upon different abilities and interests; and by transferring vocational training from the secondary schools completely to outside training agencies.

TUNISIA

Despite the remarkable achievements Tunisia has made in attaining universal primary education in the past decade, there are glaring deficiencies in the quality and efficiency of basic education. The enrollments have outstripped the budget allocations needed to support them and the decline in quality is attributed to this. In addition, there are organizational problems in the MOE which lead to management inefficiencies. Finally,

vocational training needs to be driven more by market demands for certain types of labor than by the supply of secondary school leavers.

Quality and Efficiency - The quality of education in Tunisia has deteriorated. While not subjected to a nationwide assessment, there is a widespread impression that Tunisian students have not mastered the basic skills of literacy and numeracy by the end of primary school. First, this is due to the curriculum which is overloaded and inconsistent with some schools emphasizing languages at the expense of math and science. Second, it is due to deficiencies in teacher training and teaching practices. The training is too content oriented with only a minimum of time devoted to methods and practice teaching. New subjects, such as evaluation and testing, need to be introduced as well. The in-service program is thin and teachers at both the primary and secondary level need to break away from exam preparation and coaching of the capable to include all students--particularly the less capable--in their instruction. Diagnostic testing and remedial instruction are also needed. Third, budgetary resources have not kept up with the rapid enrollment increases, and so many schools are deprived of adequate texts, materials and libraries.

Inefficiency is marked by very high repetition rates at the primary level which are between 20 and 30 percent.

Organization - Lines of responsibility are not clear within the Ministry of Education resulting in confusion, duplication or mismanagement. For example, various aspects of teacher education are handled by different directorates within the MOE. Examinations are managed by administrators with little technical background or training in testing and measurement. Curriculum development has been handled by committees made up of inspectors, teachers, administrators and other concerned groups, but committees do not include subject matter specialists. Finally, school directors and field administrators have little or no management training, and the ratio of inspectors to teachers supervised is so large, the inspectors spend most of their time on administrative matters with little time for pedagogic guidance.

Vocational Training - While not a part of basic education, vocational education in Tunisia has tried to complement education by gearing the size and direction of its programs to lower secondary school leavers. However, employers have complained that graduate trainees are not properly prepared for jobs with appropriate skills. Vocational training is not sensitive enough to market needs, nor does it prepare a flexible and skilled labor force. In addition, the apprenticeship training, while having a long tradition in Tunisia, needs to be upgraded so that modern skills are acquired.

Education and Training Reform - Tunisia has embarked upon a long-range reform to: (i) allocate more resources to a self-contained basic education cycle of sound quality (grades 1-9); (ii) improve the quality and relevance of secondary education; and (iii) upgrade vocational training and improve coordination with public and private sector companies.

The principle of Basic Education is supported by the highest government authorities and will consist of a cycle of formal schooling covering grades 1 through 9 which eventually will become compulsory. Students then will either continue onto a more selective secondary education (grades 10-13), enter training institutions, or enter the job market. Qualifications for teacher education will be upgraded, and in-service training will introduce existing teachers to subject matter changes, to new texts, programs of student, and instructional materials. In teacher training, special emphasis will be given to diagnosing academic weaknesses in students and providing remedial instruction to help reduce the high repetition rates. Curriculum reform will consolidate the number of subjects at grades 1-9; will strengthen the teaching of science and technology; and will resolve when to start teaching French as a second language.

Management reform consists of decentralizing the implementation of the new curriculum and related actions by strengthening regional educational units. In addition, individual schools will have greater authority--and accountability--to implement the reform.

Vocational reform consists of tighter linkages between training institutions with productive sectors, promotion of apprenticeship training, and the upgrading of training staff.

MOROCCO

Of all the countries under consideration, Morocco has the greatest problems of access and efficiency. While there has been improvement along these lines with 79% enrollment at the primary level, this is a recent phenomenon as Morocco has a low adult literacy rate of only 40%. In addition there is gender inequity throughout the education system with a male primary enrollment of 96% and a female primary enrollment of only 62%. The main constraints to basic education in Morocco are poor access, inefficiency and low quality. In addition, there is an imbalance in the Moroccan educational system with excessive spending and attention paid to higher education. Only recently has there been a commitment to redirect expenditures to basic education. Finally, there has been excessive funding for education in general with much of the excess attributable to the high unit costs of higher education.

Inefficiency and Low Quality - The primary repetition rate is 22%, with a high drop out rate (21% drop out before the fifth year). Only 24% of students complete the five-year primary cycle in five years and the average number of years of instruction required for each graduate of the five-year primary cycle is 8.6 years. The highest repetition occurs at the fifth primary year, which fully 50% of students repeat. This is the highest reported incidence of inefficiency due to class repetition of any public school system.

Concomitant to this high inefficiency is low quality. Since there is intense competition for the limited places in secondary school, the end of the fifth year examination takes on an exaggerated importance. While not documented, this no doubt results in much of the teaching being coaching and exam preparation with emphasis placed upon priming the more capable students for that exam at the expense of the less capable ones.

Competition is so intense that the high repetition rates for the fifth primary class (and even for earlier classes) result largely from parents' desires to hold back their children so as to give them the best possible chance of performing well on the test.

Access - Basic education is still not available to a significant proportion of the school-age population. The most conspicuous aspect of this is the poor access for girls of whom almost 40% do not attend school. The problem is especially acute in rural areas where girls account for less than 30% of primary school enrollments. In addition, female adult illiteracy is more than 50% higher than male adult illiteracy, and this reflects the lower and sporadic rates of female primary school attendance, particularly in rural areas.

Contributing to this gender bias in rural areas is the remoteness and isolation of rural schools--hence the difficulty of travel for females; the shortage of women teachers whose presence would help overcome parents' reluctance to send their daughters to school (the number of female teachers at a school correlates with the enrollment of girl student); and the lack of suitable housing for female teachers.

Higher Education Emphasis - Since independence the Government efforts in the education sector emphasized secondary school expansion and during the 70's and 80's places had to found for many of these graduates at the University level. University expansion in particular was seen as necessary to train upper-level civil servants. The civil servant ranks have been filled for some time, but it has only been recently that Moroccans have put the brakes on university expansion because of the high unit costs and the inherent inequities in university education.

Excessive Education Expenditures - Education expenditures have eluded the control of policy-makers and have grown faster than all other categories of public expenditures. While they have fallen from a high of 29% of government recurrent expenditures in 1985 to 17% in 1989, they are well above the average for Lower Middle Income Countries of 13%.

Education Reform - Morocco has engaged in a reform to make education more equitable, more cost-effective, and more consistent with its medium term development needs. Policy measures are: (i) to expand basic education (grades 1-9); (ii) to improve educational efficiency and quality through reduction of repetition and dropouts; and through increasing curricular relevance and instructional effectiveness; and (iii) to contain the growth of public expenditures on education through cost recovery measures, encouragement of private sector participation, and reduction of unit costs;

PHILIPPINES

With dramatic emphasis upon educational development beginning in American Colonial rule, the Philippines had an early start in building its school system when compared to other developing nations. As a result, it achieved universal primary education years ago,

and today has the highest enrollments at the primary, secondary and tertiary levels of all the LMIC countries under consideration. While there are inequities in terms of social selection--mainly there are inequities in terms of socioeconomic criterion--there is no problem to basic education in the Philippines. The most severe problems are those of low quality and inefficiency.

Quality - Student achievement on standardized tests at the elementary and secondary levels is low in all curricular areas. On nation wide tests, Filipino students fall considerably short of acceptable standards in language and mathematics. In a recent international study of science achievement in 17 countries, they fall behind other countries. Philippine fifth graders answered 9.5 items out of a total of 24 items, while fifth graders from Hong Kong and Singapore both scored 11.2 items. Philippine eighth graders correctly answered 11.5 items out of 24, while eighth graders of the same two countries and Thailand answered 16.5 items. In addition, students from schools in economically poorer communities and regions performed lower than students from schools in economically more prosperous communities and regions (World Bank, **Philippines Education Sector Study, I**, 1988:10).

Inefficiency - Repetition does not seem to be a problem with 2% repeating at primary level--the lowest of the countries. However, there is a high incidence of dropping out at the primary level with more than one-third of entering students failing to reach the sixth grade. The dropouts are concentrated among the economically disadvantaged students. Using fathers' education as an SES measure, students whose fathers received a college education rarely dropped out, while nearly 50% of those whose fathers had only a primary education leave school without completing the cycle. In addition, school-related factors seem to influence dropping out. Evidence shows that students in schools with higher achievement levels have a high probability of completion even when other factors are held constant. However, children in rural and disadvantaged schools with low achievement are more likely to drop out.

The quality and inefficiency of student performance appear to be affected by the quality of teachers, the language of instruction, and by the extent of decentralization and accountability in school management.

Measures of the low quality of teachers are poor performance on a competency test given to a large sample of trained teachers; and that only about 30% of all graduates from teacher training between 1978 and 1985 passed the Professional Board Examination for Teachers. While there have been efforts to raise the entrance standards for candidates entering teacher training institutions, there has been no concentrated effort to improve teacher training. In addition, only until recently has the government made any attempt to enhance the profession of teaching by raising salaries.

While 75% of the population speak neither English nor Filipino as a first language, the languages of instruction in primary school are English for mathematics and science and Filipino for all other subjects. Evidence is not available, but it would seem that these "foreign" languages interfere with the local languages so that students have difficulty

making the transition in school. This interference would inhibit rather than facilitate learning.

One study which compares public and private schools finds that, after controlling for selectivity in student characteristics, the primary and secondary private schools outperformed the public schools (**IBID**:20). In addition, the private schools had lower unit costs. The reason, it was argued, was that parents and local communities of the private schools had more influence on school financial and academic operations than their counterparts did for public schools, Hence the private schools felt more accountable to the parents. It must be noted, however, that only 6% of all primary students attend private schools in the Philippines.

SRI LANKA

In terms of enrollments and efficiency, Sri Lanka has an impressive record. A well developed primary system provides an educational opportunity for every child, and well over half (66%) of the secondary school age population is enrolled in secondary school. In addition, its adult literacy rate approaches 90%. Also, 95% of primary students complete the primary cycle and only 9% repeat at this level.

The principle problem is the uneven quality of basic education. Poor performance at the primary and lower secondary levels (as measured by student achievement) is due to: (i) inadequate teacher training and low morale; (ii) inefficient supervision and management in the school system; and (iii) poor facilities and shortages of material inputs. There is also a problem of unemployment of secondary school leavers. While this may seem to be a mismatch between an intense academic curriculum at the secondary level and the realities of the marketplace, it is really more an issue of inadequate employment opportunities than of inappropriate education.

Teacher Quality and Training - In the past teachers enjoyed status and salaries. With the rapid increase in enrollments during the 1970's, many teachers were recruited with little or no training, and so the teaching standards declined. Nor was there an adequate in-service training program to prepare the untrained teachers. Recently there have been attempts to redress the problem. In-service training was expanded, teachers' salaries were increased, and requirements for teacher candidates were raised from O-level to three passes at the A-level. Nevertheless, the quality of teaching is still uneven. In addition, it is difficult to get teachers to serve in rural areas, and much of the system is marked by teacher absenteeism (as high as 35%).

Organization and Management - Because of regional and local inequities in income and development status, there are great differences in the quality of pupil performance between and within regions. While the MOE has tried to target efforts to assist the low performing schools, weak central management has hindered these efforts from being successful.

There is an attempt underway to decentralize administrative authority and responsibility through a tier system whereby regional and local groupings of schools are formed. At the lowest level are clusters of schools each of which is headed by the largest or core school. It is hoped that through this restructuring and decentralizing of authority to the regional and local levels, that schools will be managed more efficiently and will be more accountable to local supervisors.

A major constraint, however, is the lack of management training and experience of principals and local level supervisors. While the MOE is attempting to train these personnel, it lacks facilities and training personnel to do the job nationwide.

Facilities - During the expansion phase of education, much of the construction was of minimal quality. Subsequent budget limitations constrained efforts to renovate these buildings and teachers needs to be increased with marginal additional expenditures to renovate buildings and improve equipment.

Curriculum - Exam pressures at the 0- and A- levels emphasize the academic subjects and instruction as coaching for these exams. As a result, students do not develop other skills which they should as part of their lifelong preparation; and there is wastage as 40% of students repeat year 10 and 15% repeat year 12 in order to take again the 0- and A-level exams respectively.

There is no political sentiment to move away from the current exam system. In fact, parents demand more academic type education because it leads (through the exam system) to the best jobs. The issues are complex involving not only an overly academic curriculum, but better linkages between school leaving and job training, the appropriateness of school leaving points, and the entire examination system. The Asian Development Bank is undertaking a detailed curriculum review regarding this.

INDONESIA

The main problems in Indonesian basic education appear to be related to quality, administration and supervision, and the status of teachers. Access, at least as far as the statistics of primary enrollments (118%) are reported, appears to be complete although there are probably pockets in the Outer Island population which need to be reached. Secondary enrollments (41%) are relatively good and student-teacher ratios at both levels are very good. Efficiency does not appear to be a major problem as the completion rate (72%) for primary school is low, and the repeater rate (9%) is also good. The number of years for graduation from primary school ranges from 6.8 in Jakarta to 8.3 in the Outer Islands. Both of these figures compare favorably with those in other countries.

Quality - There are considerable differences in quality of inputs, such as teacher qualifications and experience, and school facilities as well as in quality of outputs such as student achievement between and within the provinces. Generally students in the

poorer and more remote schools in the Outer Islands do less well than those in the urban based ones and those in Java and Bali.

Apparently, however, there is no consensus as to what is meant by quality of outputs:

> The current emphasis on improving the quality of primary education is appropriate, but unfocused. There is no clear and widely accepted definition of what is meant by quality education or what the indicators should be (such as student achievement gains, development of critical thinking skills, demonstration of civic attitudes and behaviors, etc.). Every individual has his or her own idea of what quality means, but these concepts are not clearly defined nor shared. Equally critical is the lack of information about the best use of resources to maximize educational quality. Whereas a variety of interventions are being implemented--inservice teacher training and upgrading, textbook production and distribution, teacher/learning methodology improvement--what is most needed is effective follow-up of each of these efforts with evaluation and research to make careful determination of the impact of each intervention and its relative merits as a cost-effective means for achieving quality improvements. **(Indonesia: Education and Human Resources Sector Review, Volume II, 1986: 90-91).**

Unless this definition is resolved, there can be no focused research effort to understand better the quality of basic education.

Administration and Supervision - There is a dualistic structure whereby the Ministries of Education and Home Affairs jointly administer primary education at the local level. This makes for confusion and duplication of effort so that responsibilities and lines of authority become blurred. It also weakens the role of the educational supervisors who cannot evaluate directly the principals and teachers for promotion or corrective action. The current system begs for unification and consolidation so that administrative lines of authority and information can pass directly from the provinicial levels to the lower levels.

Teachers' Status and Instruction - As is the case in other countries, the status of primary teachers is low because of low pay and inadequate incentives for posting and promotion. Teacher training schools are not the preferred choice of students who seek an upper secondary education. In addition, the more competent students choose a general or technical stream in secondary school and not teacher training. Moreover, requirements for entering teacher training institutions are not strict so that quality of candidates for training is not strong.

Private Schools - The Indonesia Sector Review mentions that private school children show considerably higher achievement than children in state, subsidized and aided schools (p. 5-57), but does not elaborate on this. Indonesia has by far the highest percentage of private schools (17%) of all the LMIC countries under consideration, and so it would be useful to know--after controlling for social selectivity--what factors contribute to this superior performance.

THAILAND

Basic education has expanded dramatically during the past decade so that primary enrollments are 99% today, indicating that universal access to primary school has been realized. Moreover, efficiency does not appear to be a major problem as the repetition rate is only 8% for primary school and the completion rate for the primary cycle is an impressive 81% (although only 70% of students finish primary education within the required period of six years.)

Despite such success, there looms the major problem of quality at the primary level, particularly in the poor rural areas and for less privileged groups of children. Related to this problem are the low enrollments and participation at the secondary level. Finally, given the recent high growth rate of Thailand, it is questionable whether it is educating and training sufficient manpower in science and technology to sustain this rate.

Quality - It is not unusual to find primary school graduates being illiterate or literate with minimal competence. IN 1985, for example, the Office of National Primary Education Commission (ONPEC) which has administrative responsibility for approximately 85% of the nation's primary schools, assessed pupil achievement and found mean test scores below the 50 percent required standard in almost all subjects. ONPEC also found that malnutrition was a greater problem than expected as approximately 50% of the students did not have satisfactory health according to the standard set by the Ministry of Public Health. ONPEC reasoned that poor health conditions were an important cause of depressed student achievement. More specifically:

- the average scores were 56.8% in Thai language and 36.5% in mathematics respectively with 50% being the minimum standard;
- average scores were 45.09% in life experience subjects and 57% in work-oriented subjects;
- average scores were judged unacceptably low in character building subjects and sanitary habits.

Unless primary education improves, money invested on expanded secondary education will be wasted because large numbers of students will be unprepared for secondary level classes.

Administration and Support - Existing economic conditions suggest that improved educational quality is likely to result more from increased efficiency in managing existing resources than from increasing the resource available to the education sector. However, the administrative system is not allocating educational resources effectively because:

- the number of teachers are not distributed equitably so that schools with inadequate numbers of teachers tend to display poor student achievement whereas schools with excess teachers operate at unnecessary high cost;

- provincial supervision and local management of rural schools which represent 90% of the schools nationwide are uneven and do not address the needs of teachers and students;

- supervision has not developed sufficient data gathering and monitoring procedures to make appropriate decisions and provide assistance at the school level;

- personnel management needs upgrading in order to assign personnel more effectively, monitor their performance, and provide management and technical training for field staff and principals.

Secondary Enrollments - These are the lowest of all the LMIC's under consideration with a rate of 29%, and these enrollments are concentrated in urban areas.

> Thailand is predicted to experience labor shortages by the year 2000, forcing real wages up and leading possibly to a relocation of labor-intensive industries to lower-wage countries. If larger numbers of work force do not yet have secondary schooling, this could pose a serious obstacle to a shift from low-wage, unskilled labor intensive to higher-wage, skilled labor industries. Both direct and perceived opportunity costs constrain rural secondary enrollments. (USAID/Bangkok 12156, March 12, 1989).

In effect, secondary level enrollments must expand if Thailand is to maintain its current level of productivity and economic growth.

Science and Technology - There is a real question as to whether Thailand will have sufficient technical manpower, particularly engineers in the next 3-5 years. While special training courses have been established to train those with a science background in technical specialities, it is uncertain whether there will be a sufficiently large trainable pool in the future. "Supply of some 9,000 Bachelor's degree graduates in science and technology in 1988 fell short of demand by some 4,000. Projections suggest that the shortfall is likely to widen, at an increasing pace through the year 2000. (IBID.)."

3.3 PRIORITIES

The major constraint--and hence highest priority--is the declining quality of basic education as measured by student completion rates and achievement. These LMIC's (and others for that matter) cannot afford to educate only a portion of their populations. Improving the quality of basic education is a prerequisite for human capital formation if it is to meet changing technological demands in the next century. While uneven quality

exists throughout the entire education systems reviewed here, its solution begins with basic education when students form fundamental approaches and attitudes toward learning.

Improving quality means raising the completion rate for basic education and raising the mastery levels of core knowledge and skills of the curriculum. This in turn upgrades the pool of educated manpower which then becomes more trainable, flexible and productive in the workforce. Not only does better basic education enable the more capable to further their education more efficiently, and thus assume high and mid level jobs; but it enables the less capable but trainable to assume jobs at lower levels and to improve their livelihoods and productivity through various forms of training. Very simply, improving basic education improves the economy.

The other constraints--overly centralized organization, inefficiencies, weak linkages between schooling and employment, uneven access, and financial limitations-are also priorities and they will be discussed as well.

4.0 BASIC EDUCATION INVESTMENT OPPORTUNITIES

The purpose of this section is to lay out investment opportunities in basic education which address the above constraints. Presentation of the opportunities relates to the five constraints of finance, training and employment, success, organization and management, and quality and efficiency. A total of 22 opportunities will be presented under the constraint headings. The opportunities are based on evidence from studies of educational development in the Third World, and these studies indicate that these options have been effective. (Portions of this section are summarized from M. Lockheed and A. Verspoor, **Improving the Quality of Primary Education in Developing Countries**, World Bank, 1989. [draft]).

4.1 FINANCIAL STRENGTHENING

Only Indonesia (2.1%) and the Philippines (2.8%) have significantly lower rates than the average (3.7%) of all Lower Middle Income countries for total education expenditures as a percentage of GNP. And only Indonesia (8.8%) and Sri Lanka (7.8%) spend significantly less than the average (13%) of the same countries on education as percentage of the government budget. Nevertheless, it would be useful to consider ways how all seven countries can increase and better utilize expenditures on basic education.

The evidence of country financing indicates that there are options to improve the financing of basic education without a drastic increase in expenditures. While not presenting a detailed review, five general policy measures are suggested as starting points for the countries to improve this financing.

4.1.1 Efficiency in Education Expenditures -- More efficient use of education expenditures through reforms in the Ministry of Education.

A number of reforms regarding the adjustment and containment of capital and recurrent costs can contribute to a more efficient use of education expenditures. The reduction of capital costs can occur by cutting construction costs on non-pedagogical buildings like boarding, assembly, cafeteria and sports facilities. Low cost construction methods and use of local materials can also reduce capital costs. Higher utilization rates of physical facilities, such as classes and other school activities held during evenings and vacation periods can also reduce capital costs. New construction should be deferred until full utilization of exisiting capacity, including facilities under construction, is reached.

Because teachers' salaries are the largest single education cost at all levels, their more efficient use can significantly reduce recurrent costs. Measures may include:

- lengthening, through a variety of schemes, the teachers' (but not the students') school day;
- holding classes six days a week in primary schools that do not already do so;
- increasing the teaching hours per week in secondary schools;
- reducing vacation periods so that teachers (and facilities) are employed more than the thirty-six weeks a year now common;
- increasing the minimum number of students in a class, especially in secondary institutions where courses may be thinly subscribed;
- use of distance education programs to address the high cost problems of increased access to secondary education for students and to continuing education for teachers.

4.1.2 Reduce dependence on public resources of post-primary education.

If basic education as a foundation is the most important level for educating a nation's children, then it should receive priority funding.

This is in fact the case for five of the seven countries with Morocco and Jordan being the exception. This imbalance should be adjusted in these two countries. Policy measures for trimming secondary school expenditures are to:

- adjust expenditures to spend more on teaching and learning materials and less on teachers' salaries (often 90% of the total budget) and student living allowances;

- make better use of private secondary schools by widening access to them by easing unnecessary restrictions (where appropriate) and providing modest subsidies;

- increase cost sharing and cost recovery measures at the university level through reduced teacher expenditures and student subsidies.

4.1.3 Central Government Allocations - Reallocate government expenditures to education from other sectors or from parastatals.

As a first step a comprehensive review of government resource allocation would have to be made. This review should determine intersectoral priorities, identify bottlenecks, and help free up funds which can be more profitably be used for basic education. Public resources in developing countries frequently finance activities of low social priority, for which government does not have a comparative advantage. Prime examples are public subsidies to unprofitable state-owned enterprises or parastatals. It may be possible to improve the flow of funds to primary education, for example, by reducing subsidies to unprofitable parastatals.

For most of the seven countries under consideration, this review would probably find an undue share of public expenditures going to unprofitable parastatals. The Philippines, with the advent of the Aquino administration, provides a good example of the shift of expenditures from these parastatals to education. With a public consensus that basic education--especially teachers--needs more government funding, the administration generated increased resources for basic education by privatizing many parastatals and reducing subsidies to the others. It then reallocated the newly generated revenues to education.

4.1.4 Tax Policy - Encourage private sector investment in education through tax policies.

Clearly, the central government has the leading public investment role in education. While this role has depended upon policy and classical taxation for implementation, there are other alternatives to increase financial resources that merit discussion. Growing constraints on government funding has focussed attention on revenue generation through tax reform, particularly when government initiates conditions for the private sector to invest in education. It can do this through tax incentives such as :

- tax credits to private companies for their increased investment in education and training activities in the public or private sectors;

- tax rebates to companies based on general skill improvement in their workforce;

- a tax holiday for companies that initiate or promote OJT activities as part of their production effort.

4.1.5 Local resources - Mobilize local resources through reform in tax policy and local governance.

Growing constraints on central government funding of education has focussed attention recently on generation of local finances. This is not to replace central funding, but merely to complement it so as to increase resources overall. This is currently being done in Sri Lanka and the Philippines. In addition, evidence from the Philippines indicates that local funding for primary schools lowered the recurrent unit costs (Jimenez, Paqueo and de Vera 1988). There are three broad ways to raise local resources:

- Local taxation - Local governments receive formal statutory powers to collect local taxes for community schools.

- Informal levies - Traditional groups (Council of Elders) raise school funds through less formal procedures.

- Local organizations - Parent-Teacher Associations or School Committees generate resources by collecting school fees, entertain voluntary contributions, and organize community festivals, fairs and other social events.

A few caveats are in order if local taxation is chosen as a policy measure to mobilize local resources.

First, the national government must set the conditions, most likely through tax reform, to facilitate and validate community and parental efforts. This means assignment of tax sources, e.g., land, housing, etc. and strengthening the administrative capacity of local officials to determine, enforce and collect taxes. Second, thorough discussion must occur among those directly and indirectly taxed.

4.2 STRENGTHENING SCHOOL, TRAINING AND EMPLOYMENT LINKAGES

Secondary schools, training systems and employers which collaborate more closely as partners can boost achievement, make training more efficient, and increase worker productivity. The idea is to tie achievement in school to job preparation, acquisition and performance. If employers reward (and publicize that they do so) individual academic achievement, then school quality and student learning is likely to improve. By collaborating more closely with schools and training facilities, employers can influence student motivation by providing palpable and realistic incentives for students to achieve so that the better students get the better jobs.

Partnerships among school, trainers, and employers can forge a link between achievement in school and future employment, a concept that has been central to apprenticeship programs in industrial countries. These partnerships must be fostered by tax and other governmental incentive packages.

More precisely, employers, schools, and training systems can take the following initiatives:

- employers need to influence students and provide them with incentives to learn by rewarding achievers with job opportunities;

- schools need to respond to these incentives by boosting the quality of instruction and by sensitizing students to the world of work;

- training systems need to act flexibly and responsively as intermediaries to both schools and employers through provision of appropriate job skills.

4.2.1 Employer Initiatives - Encourage employers to collaborate with schools to boost student achievement.

Employers both in the private and public sectors can become more active partners in the education of students, particularly at the secondary levels. They can begin by encouraging students who do well in core subjects, particularly math, language and sciences. Employers need to make students aware that they will be rewarded with attractive jobs if they succeed in school.

Employers can further tighten the linkages between schooling, training, and employment by:

- providing schools with a data bank of available job listings, descriptions, and requirements;

- collaborating with schools to set general competency guidelines, particularly in science and technology, that could be used in school curricula and training programs;

- providing internships, summer jobs, and opportunities for employment to the more promising students as they near graduation;

- subsidizing selected education programs to develop career-oriented curricula.

The private sector should be part of the national goal setting process for education. Governments through tax incentive systems can form important alliances with job creators.

4.2.2 School Initiatives - Prepare students for training and employment opportunities through orientation, testing, counselling, field visits, and apprenticeship programs.

The best way basic education can prepare youth for training and employment is to insure that they complete their education and that they acquire problem-solving

competencies by mastering literacy and numeracy. An effective basic education insures trainability either in training institutions or in employment.

However, while training should take place outside of primary and lower secondary schools, schools can facilitate the entry of graduates into training institutions, and school leavers into the job market in a number of ways:

- Orientation - Schools can reduce the selection emphasis on the exit examinations and strengthen the emphasis on orientation (e.g., recommended for Morocco as reform measures). Alternate assessment measures like diagnostic and assessment testing initiatied in the lower grades should enable school officials to know who is likely to pass the exit exam and who is not. A review of each student's strengths and weaknesses on the exit (and other) exams, should enable school officials to orient student to further education or training upon graduation.

- Aptitude Testing - Secondary schools can introduce aptitude testing in cognitive and non-cognitive areas, and in areas which are not covered by the school curriculum.

- Counselling - On the basis of the above two measures, schools can introduce counselling to help orient a student in a particular area--be it in industry, manufacturing or agriculture.

- Field Visits. Field trips and visits to large industries, agribusinesses, or public utilities, while educational in purpose, should provide a palpable experience for young students to become acquainted with the world of work and to match the requirements needed to function in it with their own developing competencies.

- Apprenticeships - Schools can orient and initiate likely school leavers to apprenticeships in the industrial, agricultural and service sectors. These apprenticeships would be followed by an initial work period and could lead to further and more advanced training.

4.2.3 Training Initiatives: Make training a responsive, flexible and effective intermediary between schooling and employment.

Training will be most effective when it builds upon the school curricula on the one hand, and prepares graduates for the world of work on the other. Skills must be taught in a meaningful and practical manner but must also be relevant to the job market. Hence training systems must be flexible and responsive to market demands so as to link schooling effectively with employment. Characteristics of such a training system are:

- existence of alternative training modes which include secondary and post-secondary vocational schools, training institutions, and nonformal training centers. The last is flexible and may lie within a public agency,

such as the Ministry of Labor or within agencies that serve particular sectors of the economy, such as agriculture, construction or transport. They are flexible in that they are sensitive and responsive to employers' needs by making use of labor market information;

- the use of alternative financing schemes such as student fees, payroll tax levies, cost recovery from private sector firms--as well as direct government financing;

- professional support and incentives within training instititutions to attract qualified instructors who are knowledgable about up-to-date skills and technical practices;

- a testing, certification and follow-up program that provides feedback to both training institutions and to employers about the work performance of graduates (Middleton and Demsky 1988:11-25)

Thus, an effective training system provides the school graduate with ample opportunity for appropriate training after he as entered the work force:

> The school or training instruction are not the only places where skills can be acquired. Apprenticeships and on-the-job training have long been used to supplement the efforts of formal learning institutions. Such alternative loci of training are both complementary and substitutes to formal schools. The two modes often reinforce each other, in the sense that graduates of the formal school system with solid knowledge can more easily later specialize in different trades. The two modes are also substitutes in the sense that a particular skill can be acquired in a specialized institute or on-the-job. In this sense, the relative cost of skill formation in the two loci would be crucial in deciding where training should take place (Psacharopoulos 1984: 18-19).

4.3 ACCESS

Widening access is a major problem with girls in Morocco. This will be discussed below. It still would be useful, however, to review options to widen access which have proven to be effective. These are wider use of private schools, multigrade classes and renovation of existing schools.

4.3.1. Access for Girls - Enroll and retain more girl students by distributing women teachers and all girls' schools more widely -- particularly in rural areas.

An initial step to widen access for girls in Morocco, and to a lesser extent in Jordan and Tunisia at the secondary level, is to gain some kind of consensus on the educational and occupational goals for women. The goals will probably not be explicitly of gender equity, but women will be expected to achieve academically and to be productive economically.

4.3.2 Choice/Private Schools - Encourage larger private school enrollments through appropriate "choice" policies.

Only in Indonesia are there a significant proportion of primary students enrolled in private school (17%), while in the other LMIC countries the proportion is less than 10%. Private schools can provide a useful function, and indirectly benefit the poor by relieving pressure on the overcrowded schools. In addition, they can provide a quality education as reports for Indonesia and Philippines noted that private school students outperformed public school students--even when student background was controlled in the case of the Philippines.

Beyond that consensus, there will probably be differences regarding the goals and objectives of women's education (El-Sanabary 1989).

The following are advocated as options to increase enrollment of girls in primary and lower secondary schools:

- Female teachers - Increase the number of female teachers to work in rural and isolated areas by providing such incentives as boarding facilities, increased training, salary increments, supervision and security precautions;

- Girls schools - Where appropriate, enable all-girl schools to meet the needs of commuting and boarding girls and to create an atmosphere of comfortableness for girl scholars--particularly at rural secondary schools.

- Dual shifts - Again, where appropriate and where there are no girls' schools, reserve one shift for female teachers and girl students to have access to school facilities.

- Quranic schools - Quranic and mosque schools can assist the public school system by reducing the overcrowding in existing (urban) primary schools. Ouranic schools for girls can increase female literacy and knowledge about health.

In addition to the special problem of girls, one way to widen access to all students is to increase the number of places available for students in school. This includes provision of private schools, multigrade classes, school renovation, and junior secondary school programs.

In Thailand it was found that private schools perform significantly better than their public school counterparts in the teaching of mathematics after controlling for student background. In addition, the unit costs in private schools were, on average, much lower than the unit costs in public schools. In effect, these Thai private schools were more cost-effective (internally efficient) than the public schools in the teaching of mathematics (Jimenez, Lockheed, Wattanawaha 1988).

Assistance to private schools can take various forms: government alternative or "choice" financing; government sponsored training courses; textbook and materials development; and curricular and instruction guidance through school visits. The strengthening of private schools to serve as a viable alternative to the public school system increases parental options regarding their children's education.

4.3.3 Construction and Renovation - Integrate tax and other incentive programs to strengthen private sector activities with legitimate government public sector investments.

With rapid expansion of enrollments in the seventies and the construction of inexpensive school buildings, many schools are deteriorating and are in need of repair today. While construction of new buildings may be needed in some cases, repair and renovation can restore adequately existing but deficient structures. The marginal costs for this are a good investment on the earlier high investment of construction.

In rural areas where school structures are small and relatively simple, education officials and teachers can mobilize community labor to assist in the renovation. A policy of matching grants whereby the Ministry provides the materials and the community provides the labor can provide incentives for this renovation at low cost--and with the added benefit of strengthening community identity with the school. Where construction or extensive renovation is needed, governments can provide tax incentives to private sector construction companies to undertake the work.

4.3.4 Multigrade classes (rural areas) - Prepare teachers to manage more multigrade classrooms.

In sparsely populated rural communities, it may be necessary to occupy classrooms with two to three grades of 10-15 students each. While this places a different set of instructional and managerial demands on teachers, multigrade classes are an effective way to improve access in rural areas.

4.3.5 Junior Secondary Schools - Where needed, initiate a development program for junior secondary schools.

In cases, such as Thailand, with low secondary school enrollments, development of a junior secondary school program may be appropriate. The scope of the program would, of course, depend on the extent of existing secondary school shortages. School mapping studies or equivalent types of assessments might be necessary to help determine the size, location and nature of individual schools, particularly when schools are sited in sparsely populated rural areas. It may be that economies of scale argue for expansion of existing secondary schools or consolidation of smaller secondary schools into larger ones. Studies in the Philippines, for example, indicate that unit costs decline with rising enrollments so that secondary schools with 1,000-1,200 students save about 25% of the operating costs of smaller secondary schools (**Philippines Education Sector Study**, World Bank, 1988:19-20).

Such a program requires a major commitment on the part of the government. Significant increases in capital and recurrent costs are necessary just to initiate the program. The widening of access at this level will broaden the range of student abilities, and so the less capable students will be in need of remediation programs and curricular adaptations. Increased amounts of teachers, texts and supervisors will also be needed to implement the program.

4.4 DECENTRALIZATION AND MANAGEMENT

Decentralization is necessary to break down the concentration of power at the educational center and to unleash the power of schools and teachers at the local level. By transferring more decision-making to intermediate and school levels, principals and teachers can participate more actively and with greater authority in the educational process. Thus, decentralization should overcome directly or indirectly the organizational and management constraints noted in Section 3 which inhibit the functioning of schools, principals and teachers.

4.4.1 School Autonomy - Strengthen the authority of field supervisors and principals through appropriate administrative directives and management training.

A first step is to mandate through administrative directives that principals have increased authority to manage their schools. This means the principal has more influence on: the recruitment, promotion or dismissal of teachers; allocation of instructional time by subject; feedback to teachers and students; mobilization and use of local resources for school development; and school and student evaluation.

It also means the principals are more accountable to local education authorities and where the structure allows it, to the community. Proxies for accountability can be achievement scores, teacher and student attendance, and repetition and dropout rates.

Next, field supervisors, intermediate level administrators and principals of large schools need management training related to the organizational environment of schools. Supervisors and administrators need to know how to manage their staff to assume greater supportive roles for schools by advising principals and teachers, encouraging school initiatives and coordinating training or staff development activities. Principals in shools with large student bodies and teaching staff, and perhaps multiple shifts, need to know how to manage the staff to meet increased demands. Principals also need to know how to supervise and assist teachers in classroom instruction and management to insure maximum student participation in learning activities.

For school autonomy to become a reality, supervisors and administrators have to shift the emphasis of their roles from inspection to support. Again, administrative directives need to redefine the inspection role narrowly and specifically, and enlarge the responsibilities of the supportive role. This can be done, for example, if inspection is separately organized and limited to such activities as identifying criteria for student and teacher attendance, curricular progress, and substandard physical and administrative criteria in schools. Principals and teachers need the confidence and freedom to take

initiatives in matters of teaching and community participation without feeling threatened that they will be criticized or disciplined by supervisors.

4.4.2 Enhancing Teacher Status - Attract and retain better teachers by strengthening incentives, increasing staff development and raising qualifications.

Teacher background in terms of educational level, training and motivation are crucial in raising the quality of teaching. This means that incentives for attracting superior candidates into the teaching profession are needed, and the selection criteria for recruiting superior candidates need to be raised. This is especially important now as the status of teaching has declined in the LMIC's as compared to a decade or so ago. Incentives should begin with raising basic education teachers' salaries and differentiating them into a meaningful career ladder (if necessary). A combination of incentives, however, involving salaries, promotion increments and allowances could attract and retain more capable and motivated teachers--particularly when competence is rewarded.

An upgrading of key allowances targeted at rural teachers--say housing, travel and pensions in a package plan -could attract better candidates in the most needed areas. As superior candidates are attracted more to teaching, then the governments can afford to raise the entrance requirements, as Sri Lanka did for example.

A strong principal can make a significant impact on teachers' instruction, student learning and school morale. The personal characteristics of effective principals as leadership characteristics will vary with the culture, and so consensus identification should help define essential criteria for selection. In addition, apprenticeships or mentoring are useful ways to prepare teachers who are potentially good candidates to become principals.

Staff development for both teachers and principals is necessary to upgrade their skills, to boost motivation and morale, and to provide them with a professional identity. Both groups should have access to inservice teacher training. These activities are relatively inexpensive but can have an impact.

4.4.3 Input Delivery - Streamline bureaucratic channels to accelerate the delivery of materials and services to schools.

Decentralization also implies that central and intermediate levels of the administrative system will deliver services and materials more responsively and directly to the local district and school levels -- and at reduced costs. This was clearly a problem in Thailand. It may be necessary to reorganize line units in the Ministries or to create separate units or agencies so that lines of authority and responsiblility are clearly defined. On the other hand, a number of functions can be effectively combined in a single organization with broad responsibilities for managing educational change. This is clearly needed in Indonesia. In effect, bureaucratic streamlining may be needed so that central units can articulate responsively with intermediate and local units.

Once bureaucratic channels become clear, then central units can convey materials and services to support schools more rapidly. Generally, textbook and materials production and distribution are handled from the central units, but require continuous monitoring and feedback from the local level as to the appropriateness and quality for the texts. Similarly, teacher assignments, in-service training needs, interactive radio programs, data gathering and processing, school visits, and other supportive services all need tight linkages among the different levels to insure effective delivery of inputs.

At the school level, grouping of schools into clusters facilitates the management of input delivery. A lead school, usually the largest one, takes on a managerial and coordinating role to serve as a center for training activities, a repository for materials and for administrative meetings. The central and intermediate levels of the education system can reach the individual schools more rapidly through these clusters.

4.4.4 Evaluation - Incorporate national assessments and evaluative research into national programs in basic education.

Only Philippines and Thailand reported levels of student achievement with recent national assessment data. A national assessment program established for regular testing and evaluation of student learning is absolutely necessary if the countries are to come to grips with improving the quality of education. A central testing agency sufficiently well staffed to provide testing services to schools and districts can provide important support for school improvement programs. Where they exist, national examination centers can provide a base to assess educational outcomes.

Most, if not all, the countries have adequate monitoring systems to gather and analyze data on teachers, students, school flows, and costs. Where necessary, these should be strengthened. Equally important is the necessity to strengthen evaluative research both at the marco level in terms of the impact of curricular changes, teacher training, and of supervisory support measures; and at the micro level in terms of school-based initiatives in teaching strategies or alternative instructional practices.

4.5 QUALITY AND EFFICIENCY

Basic education possesses quality when students achieve a required level of learning and is efficient when most students complete the learning cycle within the required time. It is argued that improvements and new directions in the following inputs will contribute to the achievement of these twin objectives. The inputs under consideration are: school environment, texts, curricula, instruction and teaching training. However, contrary to conventional wisdom, the following inputs--as marginal inputs--do not contribute to these objectives: reductions in class size, extending preservice training, and introduction of new (hard) technologies.

Educational policies in developing countries have advocated in the past class size reduction, extended preservice training, and new technologies as major efforts to boost marginal, not massive, in cost and scope. Even as managerial inputs, it was believed that they would be effective. Thus classes of 50 were cut to 35; teacher training was

extended from 2 to 3 years; and computers were used to assist instruction in selected schools. Experience and evaluations found, however, the first two policy changes ineffective: students learned just as well in classes of 50 as they did in those of 35; and an extra year of teacher training made no appreciable impact on teaching methods later on. While computer assisted instruction, as a favored technology, did contribute to gain scores in learning, the prohibitive costs of the hard and software as well as the training and infrastructural adaptations necessary to implement it, did not justify the high costs. Therefore, marginal changes in these three areas are not recommended as options.

4.5.1 Effective Schools - School officials must set high academic and administrative standards.

Research in both industrial and developing countries converges in terms of isolating key factors or characteristics of the school environment which make it effective. These are:

- academic priorities - school personnel emphasize that schools are for learning, and academic success is expected and rewarded.

- basic skills - instructional practices focus on basic skills and achievement, particularly in language, mathematics and science.

- instructional leadership - principals and teachers set high standards for learning and behaving in class.

- high teacher expectations - teachers share high expectations so that all their students can and will learn.

- continuous assessment - teachers regularly and consistently give students feedback so that the latter know where they stand.

While it is impossible to implement "effective schools" as a package, it is possible to focus inputs for the creation of an effective school environment.

4.5.2 Texts and Materials - Ensure texts and materials are integrated with curriculum content and that the private sector has a role in text publication and distribution.

The single most effective instructional material is the textbook or student guide. A decade of research documents the consistently positive impact of texts and related materials on student achievement in developing countries (Heyneman and Loxley,1983). Inexpensive methods of textbook or materials production make it possible for every child to have text for each subject. However, the integration of texts with the subject matter and sequence in the curriculum a well as with pedagogical methods in teacher training is important if maximum use is to be made of texts. The text content should relate to curricula and syllabus guides, and teachers should know how to use the texts appropriately.

Other than textbooks, few instructional materials have been identified for their unique contribution to student learning. Programmed materials, as step-by-step scripts for teachers to instruct or for pupils to learn, have been used widely in primary schools with some success. They have been a core component in projects PAMONG (Indonesia), RIT (Thailand) and IMPACT (Philippines) where they demonstrated effectiveness. When compared with students receiving standard instruction, those using programmed materials did as well or better in different subjects (Office of National Education Commission, Bangkok: 1987).

Publication and distribution of texts in many AID countries is exclusively in the bounds of the government. Private sector expansion into this activity should be supported. Government can thus focus its role on quality control of content rather than on maintenance of printing and other facilities.

4.5.3 Curricula - Emphasize and upgrade science and mathematics components of the general curriculum.

There is no magic curriculum for effective learning as ultimately a curriculum is an expression of what a given society chooses that its children should learn. However, it is commonly recognized that basic education should provide adequate instructional time for the study of literacy, numeracy and fundamental knowledge and skills related to the local and larger physical, biological and social environment. The key question is: do schools pay sufficient attention to the teaching of mathematics, scientific principles and technological applications? Without a solid foundation in these areas, students cannot pursue adequately further education in these areas; nor can they gain full benefit from vocational training for from other kinds of training in the world of work.

Probably all of the seven countries under consideration could benefit from curricular and inservice training in mathematics and science upgrading. This could be a combination of content upgrading as appropriate and infusion of varied and proven new instructional methods related to the teaching of math and science such as those mentioned in the Philippine science study above.

4.5.4 Instruction - Improve and vary instructional methods so as to include all students in the teaching-learning process.

Generally, primary and lower secondary school teachers use a narrow and restricted repertoire of instruction methods. Teacher lectures characterize much of the instruction with students participating passively, memorizing passages from the blackboard or texts, and rarely asking questions. Anderson (1987), for example, in a nine country study observed that three major activities occur in the classroom: teachers talk at or with students (35% - 82% of the time); students are assigned desk or laboratory work (15 - 47%); and teachers conduct classroom management activities)1% - 16%). No doubt the limited education and training of teachers contribute to this narrow approach. In addition, the urgency to coach and prepare students for the all important selective examinations at the end of each cycle pressures teachers to use the methods they feel

confident with (lecture, assignments) and to concentrate on the more capable students who are likely to pass the exams.

No one instructional method is most effective. What is advocated here is that teachers of basic education have an expanded repertoire of methods so that they can choose any one or a number of methods to accommodate student differences in learning abilities. The key is for the teacher to widen methods, approaches and management styles in the classroom so the that slow, medium and fast learners all master basic competencies and skills. In effect, teachers of basic education must adjust and adapt their education to accommodate different rates of learning.

Characteristics of effective instruction are:

- clarity of objectives and instructional delivery
- active and direct guidance
- instruction adjusted to student differences and needs
- appropriate and variable pacing
- group work (e.g.. cooperative learning groups or peer tutoring)
- reinforcement
- feedback, monitoring and evaluation (Herschbach 1989)

Teachers must open up the classroom to stimulate and respond to individual and group differences in learning abilities. They need to motivate and enable the less talented to learn with the same opportunities as the more talented. Instructional strategies which have met with some success in developing countries are: modularized instruction, mastery learning, cooperative team learning, and direct instruction (See Appendix II for a description of each).

Evidence suggests that a combination of the above strategies or elements of them are effective in raising achievement. For example, a study of five science teaching practices in 372 fifth grade classrooms in the Philippines found that frequent group work including peer tutoring, frequent monitoring and testing, and time spent teaching with application in the laboratories all contributed significantly to student achievement while controlling for student, teacher and school backgrounds (Lockheed, Fonancier, and Bianchi 1989).

4.5.5 Teacher Training - Emphasize practice teaching in pre-service training as well as flexible forms of in-service training.

Little is advocated as options for preservice training. This is because the training curriculum in each country has probably evolved in a unique fashion in response to the educational need and demands of each country over the years. Moreover, most research concludes that preservice training (other than practice teaching) contributes little to actual teaching practices in school. Practice teaching under the guidance of an experienced teacher can be effective in developing and broadening instructional techniques in new teachers. It can be done through integrating classroom observation

with teaching practice; through periods of full-time teaching; or through extended internships or supervised teaching.

Inservice training can be effective for general upgrading or for improving competencies or skills in particular areas. Examples of particular areas might be:

- subject specific methods, e.g., inquiry methods for science instruction
- content and instructional innovation in a revised or new curriculum
- monitoring, testing and evaluation
- classroom management

Implementation of inservice training can be achieved through: short term residency programs at large schools or education offices; field visits to individual schools, and distance education through correspondence and radio.

5.0 AID PROGRAM STRATEGIES

This section identifies and describes briefly eight strategies whereby country missions can implement one or more of the above investment opportunities. The strategies are modest and not intended to be major assistance interventions. It is understood that missions have limited funding for education. However, a modest intervention such as a policy dialogue, study or training activity can have a noticeable impact, particularly if it reinforces a country's educational development. Therefore, small scale, selective and well thought out efforts are encouraged to assist in addressing constraint to basic education.

While some of the seven LMIC countries are in varying stages of implementing educational reforms, all of the countries need to review and rethink policies which address the overall problem of declining quality. Missions can assist these countries by initiating policy dialogues related to any of the above constraints and corresponding policy options. The following are examples of policy measures which could be useful:

5.1 POLICY AND PLANNING

- Coalition-building efforts in the form of partnerships or collaboration among AID, NGO and government agencies to encourage educational reform and initiatives as outlined in Section 4;

- Dialogue with senior LMIC officials that identifies continued and improved investment in education as an essential building block for continued economic growth;

- Increasing parental choice regarding alternatives to students education, such as the enhanced role of private schools or private sector training;

- Provision of seed money to regain activities, studies or assessments that are urgently needed or likely to have an immediate impact, particularly if they are likely to spark a policy dialogue or education reform;

- Installation of a foreign educational specialist in the planning unit to help identify policy areas for development assistance and strategies to implement them; and to provide guidance in planning activities.

5.2 STUDIES AND ASSESSMENTS

Only the Philippines and Thailand reported student achievement data as assessment measures for the decline of learning in primary schools. Other countries--particularly Indonesia--could develop national assessment capabilities and use them through extensive testing. Each of the LMIC's has a priority area where macro and micro level studies could pinpoint bottlenecks so that appropriate policy, planning or project measures can be implemented. For example, studies could undertake to:

- identify factors which contribute to the low secondary enrollments (e.g., Thailand) and help formulate policies, planning and incentive measures need to increase these enrollments;

- describe and explain the extent to which primary school exit examinations (e.g., Morocco) exaggerate competition so as to stifle effective learning;

- target financial incentives and organizational changes necessary in rural schools to retain more students and increase their completion rates (e.g., Philippines).

AID sponsorship of such studies should also strengthen local capacity to conduct them through assistance to appropriate institutions. In addition, proper identification of the target audience for such studies should insure that they will be used effectively, be it for policy, planning, analytical or evaluative purposes.

5.3 SPECIFIC ACTIVITIES

Given the wide range of assistance needed for LMIC basic education, single activities can be used flexibly to address some of these needs. Moveover, well directed activities enable a mission to address some of these needs without creating a new education program. Funding might come from projects with similar or related purposes such as projects in training, rural development and private enterprise, or from existing or new PL 480 or PVO activities. Examples of useful activities in basic education are:

- Mathematics and science upgrading through a curriculum development package that includes pilot testing of new curricular guides, materials and in-service training for teachers;

- In-service training and practice teaching in alternative instructional methods to increase classroom participation in learning activities;

- Training and orientation programs for rural school inspectors, supervisors and field administrators;

- School lunch programs (e.g., Thailand) for rural schools through PL 480 funding or PVO activities.

5.4 PEACE CORPS

A.I.D.'s collaboration with the Peace Corps in education and rural development activities or projects has become a successful reality in the 80's. It can be a very cost-effective way to mobilize AID resources and implement them through volunteers, particularly in rural areas where they confront effectively living and travel hardships. In effect A.I.D.'s financial and managerial resources and Peace Corps' "people power" complement one another to deliver technical assistance, services, guidance and training in needed sectors. Peace Corps has the following projects in these countries:

	COUNTRY	ACTIVITY
(i)	Morocco	English language training in secondary and higher educational; English language development in key productive sectors.
(ii)	Tunisia	Special education and training; rural youth development; and English language training.
(iii)	Philippines	Teacher training in mathematics, science and English; special education.
(iv)	Thailand	Teacher training and agricultural extension in 45 new community high schools; English language training; community and youth development.
(v)	Sri Lanka	English language development in teacher training.

Missions could build upon the current projects for basic education assistance. The teacher training project in the Philippines, for example, uses qualified and experienced American elementary school teachers to work with Filipino counterparts in schools and in teacher training colleges. This is an excellent "hands-on" way to improve classroom instruction and management through guidance, modeling and practice with American teachers in situ.

5.5 DONOR COLLABORATION

The World Bank is planning to assist comprehensive educational reforms in Morocco, Tunisia and Jordan. All of these reforms include proposed assistance to basic education. AID can collaborate with the Bank (and other donors in education) by providing targeted and limited investment activities to donor projects. For example, AID could provide technical assistance or training in curriculum development, teacher training, supervision or testing, while the Bank manages the more comprehensive and costly components of the reforms such as textbook development, budgetary assistance, policy and administrative innovations, and construction or renovation.

5.6 BUY-INS

AID is currently active in Thailand and Sri Lanka with the centrally funded BRIDGES project and in Indonesia with another centrally funded project, IEES. Missions in each country can initiate or expand buy-ins in basic education activities such as those mentioned above for Indonesia and Thailand. Where there are no centrally funded projects, missions could encourage S&T/ED to begin one and buy into it to initiate basic education activities.

5.7 PARTICIPANT TRAINING

Participant training is a cost-effective activity conducted by AID. It is also flexible because different types of training can be combined into one country or regional project. Participant training can be used in different ways for improvement of basic education:

- Short term courses, observation tours or internships at schools can provide central and field staff, teacher trainers, and school principals with training in any of the policy options, particulary in those related to quality and management improvement. Training courses coupled with internships in US school systems can have a significant impact upon the LMIC Ministry and school personnel;

- Long term training can prepare Ministry personnel, particularly those in policy-making and planning areas for future roles in basic education;

- Missions can encourage the development of linkages between university education faculties in the host country and university education faculties in the US as they relate to basic education. This can be initiated through faculty exchanges coupled with the training of host country faculty or students at US universities.

5.8 PROJECTS

For the most part, the above strategy options are small in scale. Missions which are ready and committed to assistance in basic education on a bigger scale can consider project development in one or more of the policy areas. Examples of these are:

- A project that attacks declining quality head on through a multi-faceted effort to interrelate curriculum upgrading, supervision, in-service training, text and materials development, examination reform and interactive radio to improve classroom teaching and learning;

- A project that widens access such as one that provides facilities, teachers, support and incentives for enrolling more girls in Moroccan primary schools;

- A project that improves organizational and management effectiveness coupled with policy measures to strengthen the financing of basic education;

- A project in education and training to strengthen training institutions, centers and resources as well as to strengthen linkages between schooling, training and employment.

5.9 COMBINATION

A combination of one or more of these strategies could also be undertaken.

6.0 MISSION GUIDANCE

The purpose of this section is to provide guidance to Missions regarding the development of basic education programs. Three formats are included to: **(1) analyze constraints to basic education; (2) identify investment opportunities to overcome these constraints;** and **(3) link appropriate AID program strategies with investment opportunities to implement them.** For purpose of brevity, these formats will be called constraints, investment and program formats. The structure of each format parallels the structure of the relevant section of the paper; that is, items in the constraint format follow the sequence of items in Section 3.0, those in the investment format follow the sequence in Section 4.0, and those in the program format follow the sequence in Section 5.0. This is to facilitate the use of the formats by enabling reviewers to assess basic educational developments in their country by referring to relevant disucssions of the subject in the paper.

Missions are requested to use all three formats to review basic education in their country. The constraints format is designed to analyze and assess a country's strengths and weaknesses regarding primary and related aspects of education. The investment format is designed to build upon the constraints analysis by identifying appropriate educational alternatives to overcome the constraints. The program format is designed to link the identified educational alternatives with appropriate means to implement them. It is hoped that Mission reviewers will use them as a package to decide on appropriate actions needed for initiating, developing or improving basic education programs or activities.

6.1 CONSTRAINTS FORMAT

Identify the significance level of each constraint as being (0) not significant, (1) barely significant, (2) significant, or (3) very significant. If appropriate, describe significant and very significant constraints on separate paper.

1. Access

_____ Primary enrollments
_____ Lower secondary enrollments
_____ Teacher:student ratios
_____ Female enrollments
_____ Regional inequities
_____ Urban/rural inequities
_____ Other

2. Efficiency

_____ Repetition
_____ Dropouts
_____ Completion of primary cycle
_____ Other

3. Expenditures

_____ Distribution by level
_____ Policies
_____ Private sector contribution
_____ Other

4. Quality

_____ Instruction
_____ Teacher Training
_____ Texts and Materials
_____ Curriculum
_____ School facilities
_____ Other

5. Organization and Management

_____ School autonomy
_____ Status of teachers
_____ Input delivery
_____ Evaluation
_____ Other

6. School, Training, and Employment Linkages
   _____ Employer Initiatives
   _____ School Initiatives
   _____ Training Initiatives
   _____ Other

6.2 INVESTMENT FORMAT

Identify the priority level for each investment opportunity as (0) no priority, (1) low priority, (2) priority, and (3) high priority. If appropriate, describe priority and high priority choices on a separate paper.

I. Financial Strengthening
- _____ Efficient expenditures
- _____ Post-primary reduction
- _____ Sector reallocation
- _____ Tax policies
- _____ Local resource generation
- _____ Other

II. School, Training and Employment linkages
- _____ Employer initiatives
- _____ School initiatives
- _____ Training initiatives
- _____ Other

III. Widening Access
- _____ Female Enrollment
- _____ Private School
- _____ Construction and renovation
- _____ Multigrade classes
- _____ Junior secondary schools
- _____ Other

IV. Decentralization and Management improvement
- _____ School autonomy
- _____ Enhancing teacher status
- _____ Input delivery
- _____ Evaluation
- _____ Other

V. Improving Quality and efficiency
- _____ Effective schools
- _____ Texts and materials
- _____ Curricula
- _____ Instruction
- _____ Teacher Training
- _____ Other

6.3 PROGRAM FORMAT

The Program format is a matrix of Investment Opportunities (columns) and AID Program Strategies (rows). Link the priority and high priority investment opportunities already identified on Investment format with the best program strategies by marking (X) the appropriate box in the matrix.

Financial Strengthening

	Policy Dialogue	Studies	Activ-ities	Peace Corps	Donor Collab	Buy-ins	Part Training	Projects	Combo-nation
Efficient Expenditures									
Post-Primary Reduction									
Sector Reallocation									
Tax Policies									
Local Resource Generation									
Other									

School, Training & Employer Linkages: Intiatives

	Policy Dialogue	Studies	Activ-ities	Peace Corps	Donor Collab	Buy-ins	Part Training	Projects	Combo-nation
Employer									
School									
Training									
Other									

Widening Access

	Policy Dialogue	Studies	Activ-ities	Peace Corps	Donor Collab	Buy-ins	Part Training	Projects	Combo-nation
Female Enrollments									
Private Schools									
Renovat'n & Const									
Multigrade Classes									
Jr. Sec. Schools									
Other									

Decentralization & Management Improvement

	Policy Dialogue	Studies	Activ-ities	Peace Corps	Donor Collab	Buy-ins	Part Training	Projects	Combo-nation
School Autonomy									
Enhancing Teacher Status									
Input Delivery									
Evaluation									
Other									

Quality & Efficiency

	Policy Dialogue	Studies	Activ-ities	Peace Corps	Donor Collab	Buy-ins	Part Training	Projects	Combo-nation
Effective Schools									
Texts & Materials									
Curricula									
Instruction									
Teacher Training									
Other									

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APPENDIX 1 - DEFINITIONS

The following are definitions of the education terms most frequently used in the paper as well as a brief analysis of Lower Middle Income Countries:

Quality - the material inputs and non-material characteristics of schools which improve learning. It refers both to inputs such as classroom facilities, teachers, textbooks, curricula, instructional methods, etc. as well as to outputs usually measured by student achievement.

Internal Efficiency - how effectively a part of the educational system uses resources to achieve certain relationship of inputs to outputs as measured by student dropout, repetition, and graduation rates. It can also refer to the relationship between the quality of inputs and outputs to their costs. For the latter, internal efficiency is the ratio of learning to costs of educational inputs, or cost-effectiveness.

External Efficiency - the relevance of an education or training program to subsequent activities of its participants. This could be further education or training, or the type, level and earnings of employment.

Access and Participation - Access refers to the availability of sufficient places in educational institutions for those who qualify to participate in their programs. Participation refers to the extent to which individuals actively engage in the educational process once they are in those places.

Equity - refers to the extent to which available educational opportunities are accessible regardless of characteristics that cannot be easily altered such as location, gender, language spoken or ethnicity.

Effectiveness - the extent to which desired outputs of schools or the educational system are achieved.

Organization - the structure of relationships among the various levels of the education systems, viz, the central Ministry, regional and local administrative levels, and schools and school boards (or their equivalent).

Decentralization - transferring authority, control and responsibility over factors that most directly affect student achievement to the local administrators, principals and teachers, while ensuring the development of complementary roles at different levels throughout the education system.

Lower Middle Income Countries - a socioeconomic profile of the LMIC's when compared to the Low Income Countries would suggest a rapidly growing economy with a higher GNP per capita. Production would be less dependent on agriculture and more so on industry, especially manufacturing, and the generation and consumption of

services. International trade and investment, and monetary and exchange policies would have a more pronounced impact upon the economy than in the past. Some LMIC's are now partners--even competitors--in production, trade, investment and policy-making with industrial nations. In addition, they carry greater political influence than before in their respective regions.

While there is rural modernization in LMIC's, urban populations probably equal in number those in the countryside. Both enjoy a higher standard of living than their counterparts in the poorer countries, particularly regarding the availability of food resources; and they also enjoy ready access to public services such as education and health.

The LMIC data are taken from the World Development Indicators. Table 1 compares the LMIC's with the Low Income Countries (LIC's) by selected indicators to highlight a socioeconomic profile of the more advanced development of the LMIC's.

TABLE 1 – SELECTED SOCIOECONOMIC INDICATORS*

		LOW INCOME**	LOWER MIDDLE INCOME
1.	GNP per capita	$280	$1,200
2.	Structure of Production: ***		
	Agriculture	33%	16%
	Industry	27%	35%
	Services	40%	49%
3.	Daily Calorie Supply per Capita	2,227	2,777
4.	Average Annual Growth of Population:		
	1980-87	2.8%	2.3%
	1987-2000 (projected)	2.6%	2.1%
5.	Percentage of Age Group Enrolled in Education		
	Primary	76%	104%
	Secondary	25%	51%
	Tertiary	4%	17%
6.	Urban Population as Percentage of Total Population	24%	51%

*SOURCE: World Development Report, 1989, Oxford University Press, New York, 1989.

**Excludes China and India as their inclusion distorted the overall pattern of other low-income countries on some indicators.

***For structure of production the data for all the LMIC's were incomplete, and so Thailand, ranked roughly in the middle of LMIC's, was picked as being representative.

APPENDIX II - SELECTED INSTRUCTIONAL STRATEGIES

Implied throughout the discussion of Instruction (Section 4.5.4) is that teachers must adjust instruction to accommodate different rates of learning. This is the central instructional and management challenge for teachers for classrooms where student abilities are wide-ranging and diverse. Teachers must widen access in the classroom so that the majority of students, not just the high achievers, participate meaningfully in the learning process. Unless they do this, the rhetoric of "providing every child with a quality education" will remain that--rhetoric.

What follows is a brief description of selected strategies for effective teaching to widen and improve learning. These strategies or ways of organizing instruction were selected because they illustrate how teaching can accommodate individual differences in abilities within a common framework. No doubt other strategies could be chosen.

Modularized Instruction

Curricular learning activities are partitioned into tasks, and the tasks are grouped into related clusters that comprise a module, or related series of modules. The module specifies the learning objectives, with content organized around the required knowledge and skills of the specific task. Modules can be used as an adjunct to more conventional teaching methods, or they can comprise key components of the curriculum.

Modularized instruction accommodates individual differences in learning rates within a common body of content. It is this flexibility and versatility which make modularization so useful as an instructional tool. It is also possible to build into instructional modules key factors which promote higher achievement, such as reinforcement, cues, feedback, and pacing. Thus superior teaching as well as common content can be provided even though the quality of teachers may be uneven. Also modules, rather that textbooks, can be updated relatively easily.

Mastery Learning

The main idea behind Mastery Learning is that all students can learn or master skills at a minimum required level; only that some students will learn faster than others. It is the time-on-task which varies among students, not the quality of content.

The first step is to establish clear--usually behavioral-- instructional objectives. Then, based on these objectives, instructional content is broken down into small, discrete units of learning. Content is organized hierarchically in increasing levels of complexity, with each small unit monitored closely to assess student understanding. The teacher generally introduces each unit to the total class, followed by the use of prepared instructional materials so that students can apply the new concepts. Brief, ungraded, student-scored diagnostic tests are used to provide feedback, followed by additional or new instructional materials depending upon the level of mastery achieved. Additional work may also include group study sessions, peer tutoring, audio-visual materials,

supplemental workbooks, etc., all to ensure that the appropriate level of mastery is achieved. Fast students will be given more complex, additional, or enrichment material to go deeper into the unit.

Mastery learning puts greater emphasis upon individual work although teachers do introduce material through group sessions. Students are expected to work mainly on their own to complete additional work so that the total class can progress together. Evaluations of Mastery Learning have shown modest but consistent gains in student achievement when compared to traditional classroom learning; they have also shown the same for student motivation suggesting that expectations for success and reduction of competition have contributed to this.

Cooperative Team Learning

Cooperative groups of four to six students are formed and work together on a task as a group. Individual members can work independently on complementary aspects of the task or the entire group can focus its efforts on the task. Grading is based either on the product produced jointly or upon the average of each individual's performance. Group work encourages peer tutoring as well as cooperative learning, particularly when high achieving students combine with low achieving students on the same team. Since competition is between groups, not individuals, the low achieving students do not feel left out and have a sense of group identity.

Rather than compete against one another, members of cooperative teams learn to support each other's achievement particularly for problem-solving objectives. Like modular instruction, cooperative team learning can be used appropriately for certain learning activities. Also, in cultures where cooperation is stressed more than competition, this team approach is appropriate.

Direct Instruction

When the teacher introduces new material to the whole class or wants to focus the attention of the entire class on a topic, then direct instruction is efficient. As a form of active teaching, the teacher determines the objectives, presents the material, monitors the outcomes, and provides feedback to students. The material is presented in a very ordered, sequenced and coherent way; particular attention is given to clarifying the main instructional points, presenting the material step by step, guiding student practice, checking for understanding and providing feedback. As the teacher corrects for errors, he may repeat instructional steps if necessary, and provide additional practice. Students participate actively in each instructional step.

The direct instructional approach has strong research support, mainly because it combines most of the characteristics of effective teaching as outlined in Section 4.5.4. It is also efficient in that it maximizes time on task and minimized management time by reducing interruptions and maintaining teacher presence. Like the other strategies, it can be used for certain subjects, say mathematics, where group instruction is essential to introduce new material.