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ABSTRACT

Education gives people the opportunity to become more productive, escape poverty, and improve the quality of their lives. For more than two decades the World Bank has supported the efforts of developing countries to expand and improve education at all levels. This document discusses World Bank efforts in support of education in developing countries as the 1990s begin. Figures on lending for education, as well as Bank support for educational policy and analysis and research are included. Strategies for educational development are presented for several different education levels and representative efforts at each level in individual countries are discussed. A number of figures appear in the booklet, and an appendix detailing World Bank education projects being implemented is 1990 in included. (DB)

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The Dividends of Learning

World Bank Support for Education

*The World Bank
Washington, D.C.*

This booklet was prepared by the Population and Human Resources Department, Education and Employment Division, of the World Bank.

The views and interpretations presented here are those of the authors and do not necessarily represent the views and policies of the World Bank or of its executive directors or the countries they represent.

The cover photograph, by Aurea Irene Singh, shows Rashaida children attending school in Kassala, Sudan.

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Contents

- Foreword by Barber B. Conable 5
- Meeting the Challenges of Educational Development 7
- How the World Bank Supports Education 9
- Strategies for Educational Development:
Twenty-Five Years of Experience 18
- Directions for the 1990s and Beyond 31
- Appendix. World Bank Education Projects Being Implemented
in Fiscal 1990 33

Foreword

A vital component of national development, education gives people the opportunity to become more productive, escape poverty, and improve the quality of their lives. These personal benefits also pay economic and social dividends. A farmer who has completed primary school is better able to use extension services and information to increase the yield of the land. A worker who has been trained to use machinery efficiently will produce more marketable goods. An educated woman is likely to have healthier children, who are more likely themselves to be educated.

Education also increases the capacity of managers, engineers, and scientists to invent and adapt technologies. It strengthens national identity and deepens social and cultural roots. In short, it enhances the ability of citizens to participate in development, to benefit from health and family planning services, and to protect and improve their environment.

Investment in education contributes as much to economic progress as investment in roads, power plants, irrigation canals, or any other physical capital. In fact, the economic returns to investment in education, as measured by productivity and income, are often higher.

The World Bank fully recognizes the economic and social benefits of education. The Bank considers investments in education to be beneficial in their own right, and as essential to the success of investments in other sectors of the economy. For more than two decades, the Bank has thus supported the efforts of developing countries to expand and improve education at all levels. Through the commitment and hard work of countless thousands of teachers, students, parents, and officials, these efforts have resulted in substantial progress, although significant challenges remain.

As the 1990s begin, the Bank is renewing its commitment to improve the educational capacities of developing nations. Drawing on experience and a clear assessment of what remains to be done, the Bank stands ready to help developing nations meet their pressing needs for educational development.

Barber B. Conable
President, The World Bank

Meeting the Challenges of Educational Development

Developing countries have taken great strides in education over the past twenty-five years. The middle-income countries have created places for almost all primary school children. Even the poorest countries have been able to increase school enrollment from about 40 percent to 60 percent of all children of primary school age, despite rapidly growing populations. In all developing countries, the number of schools has doubled, and the number of teachers has tripled. Secondary school enrollments have expanded rapidly, more than doubling from 16 percent of the school-age population in 1960 to 37 percent in 1985. Enrollments in higher education grew from 2 percent to 7 percent in the same period.

But much more remains to be done to narrow the education gap between developing and industrial countries, where enrollment ratios in 1986 were 100 percent at the primary level, 91 percent at the secondary level, and 34 percent in higher education. The three main challenges are improving access to learning, improving the effectiveness of education and training systems, and mobilizing the resources for both.

Access

Education must reach beyond the fortunate few. Despite the gains that have been made, enrollment growth in the poorer developing countries has slowed markedly since 1980. One third of all adults in the developing world are illiterate. One fourth of all school-age children are not attending school. Now about 500 million, the school-age population in developing countries will increase by fully another 200 million by the year 2000. More than half of the increase will be in the poorest countries of Africa and Asia. Those least likely to receive education's benefits come chiefly from traditionally disadvantaged groups—the rural, female, poor, and minority populations.

Women and girls, in particular, face economic and cultural barriers to attending school at each level of education. For example, 60 percent of the primary school-age children not in school in developing countries are girls. In 1986, 45 percent of boys were in secondary schools, but only 32 percent of girls. Only 5 percent of women, compared with 9 percent of men, were enrolled in higher education. Lack of equitable access to education diminishes the productive potential of half the national labor force. Nonetheless, expanding access alone is wasteful, if it does not lead

to significant learning or more productive employment. It depletes budgets, but adds nothing to people's creative and productive potential.

Effectiveness

Improving educational effectiveness is fully as challenging as expanding opportunities for schooling. Primary school children in low-income countries now learn very little—less than their national curricula expect and less than their counterparts in richer countries. They perform especially poorly when tasks require applying knowledge to new problems.

Nor is the problem of effectiveness confined to primary school. Performance on secondary school examinations is often very poor. Vocational education and training programs are often inflexible and costly, unable to adjust to changing skill demands, the result is low levels of employment after training. Institutions of higher education in many countries are starved for resources, unable even to provide good teaching, much less to fulfill their potential for research and intellectual leadership.

Resources

The global economic crisis of the 1980s has affected government budgets and external financing, and resources are indeed scarce, especially in the social sectors of developing nations. As a result, the education gap is widening between developing and industrial countries. In 1960, industrial countries spent fourteen times more on each primary pupil than did developing countries. In 1985, they spent fifty times more.

Resource constraints are a principal barrier to narrowing that gap. Industrial countries typically invest almost 6 percent of their gross national product (GNP) on education and training, low-income countries invest a little more than half that share, although their school-age population is 75 percent larger. For the low-income countries to be able to provide a place in primary school for 95 percent of their school-age children, they would probably have to spend as much as 3.5 percent of GNP on this goal over the next ten years. Their actual resource commitments fall far short of such a goal, however. Recurrent public expenditures on primary education were 1.3 percent of GNP in low-income countries in 1985. That amounted to \$31 per pupil, a 25 percent drop from the 1975 level of \$41 per pupil.

Many schools in developing countries fail to reach or teach children not only because more resources are needed, but also because available

resources are not used efficiently. In primary schools, dropout and repetition rates are high, so that countries have to pay for as many as nine years of education simply to produce one pupil who has completed the fifth grade. This inefficiency—accounting for as much as 30 percent of many primary education budgets—is something few nations can afford. Research shows that investments in textbooks and other teaching aids can shorten the time it takes a primary school student to progress through the curriculum, resulting in savings as much as four times the cost of materials. But in many countries, a disproportionate amount goes for salaries instead of the books, educational supplies, and teacher training—directing resources toward those ends instead would improve learning, reduce repetition, and hence improve efficiency.

The same constraint hampers secondary schools and universities, with serious impact on learning in science, mathematics, and technology. In many countries subsidies for boarding expenses at the secondary and university level principally benefit students from relatively well-to-do families and divert scarce resources from teaching. In vocational education and training institutions, where it has always been difficult to pay adequate salaries for competent instructors, lack of financing for equipment and materials greatly reduces the students' ability to learn useful skills and prepare for well-paid jobs after graduation.

Revitalized Commitment

Developing countries around the world are revitalizing their commitment to expanding and improving education, energized by their past successes and their growing understanding of the means for further progress. The World Bank shares this commitment and will continue to provide both financial and technical support for national efforts through an array of financial, policy, and technical services.

How the World Bank Supports Education

As a development institution, the Bank supports educational development principally by providing financial resources and policy advice. Since the first education loan was made to build secondary schools in Tunisia in September 1963, the Bank has approved loans totaling nearly \$10 billion for 375 education projects in 100 countries (table 1). These projects have helped developing countries build or improve tens of

Table 1. World Bank Lending for Education, by Region, Fiscal 1963-89

Period	Africa		Asia		Latin America and Caribbean		Europe, Middle East, and North Africa		Total	
	Millions of U.S. dollars	Percent	Millions of U.S. dollars	Percent	Millions of U.S. dollars	Percent	Millions of U.S. dollars	Percent	Millions of U.S. dollars	Percent
1963-69	89	37	40	17	55	23	59	24	244	100
1970-74	240	29	221	27	120	15	234	29	815	100
1975-79	380	23	155	27	228	14	617	37	1,682	100
1980-84	510	17	1,504	51	355	12	582	20	2,951	100
1985-89	624	15	1,788	44	519	13	1,113	28	4,044	100
Total	1,843	19	4,058	41	1,277	13	2,605	27	9,786	100

thousands of schools and create millions of places for students and trainees.¹

Loans have been made at all levels, from primary to postgraduate, for vocational education and training and for many types of nonformal education. In recent years almost a third of Bank lending for education has gone to vocational programs, and most of the balance has gone to general educational programs, with emphasis on primary education (figure 1). Projects have been undertaken in every region, currently, about half of the Bank's education lending goes to Asia (figure 2). A listing by region of all Bank education projects now being implemented is given in the appendix.

The Bank's support for education goes beyond financial assistance, however, to include a wide range of complementary activities. The Bank provides technical assistance, conducts policy analysis and research, disseminates findings, engages in policy discussions with governments, and helps mobilize and coordinate external aid for education. The typical course of a Bank operation is described in box 1.

Before extending a loan, the Bank joins the government in analyzing the country's education sector, including an assessment of its development prospects, education policies, investment priorities, and the capa-

1. The World Bank provides financial support for education through two institutions. The International Bank for Reconstruction and Development (IBRD) extends loans to more economically advanced developing nations at near market rates. The International Development Association (IDA) provides less developed countries—those with annual per capita gross national product of \$480 or less (in 1987 dollars)—with credits on concessional terms. Aside from their differing repayment terms, IBRD loans and IDA credits are identical, and save for the income levels of the recipients, the criteria for extending them are similar.

Figure 1. World Bank Lending for Education, by Category, Average for Fiscal 1987-89

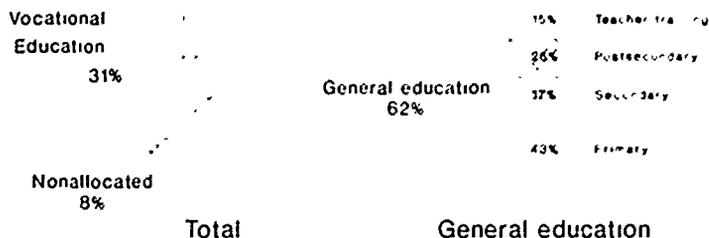
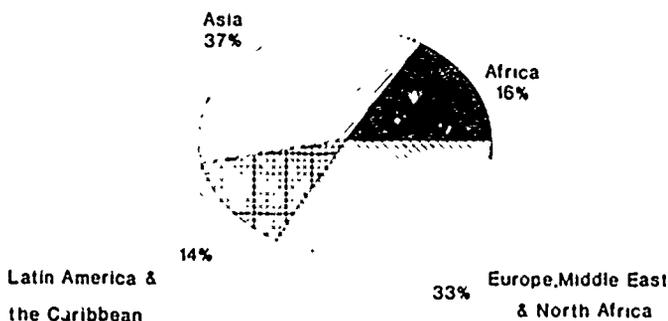


Figure 2. Distribution of World Bank Lending for Education, by Region, Fiscal 1987-89



city of the country's institutions to realize investment goals. The Bank evaluates how changes in education policies will contribute to the country's economy and how national economic policies affect the education sector.

Education sector analysis paves the way for a continuing dialogue between the Bank and the country on educational development strategies. These discussions contribute to the country's national planning, generate ideas for the design of sectoral investment programs, and provide the Bank and the government with a framework for lending programs.

Bank missions, comprising educators, economists, administrators, and other development specialists, work with country officials to design and carry out sector studies and to assess the findings. Where possible, sector studies draw on government programs and previous Bank operations in a country and focus in greater depth on particular sectoral problems. New technologies provide the opportunity to improve sectoral analysis. For example, computer simulations are being used increasingly to calculate the varying effects of different lending strategies.

Bank Lending For Education

The Bank's lending for education has gone through several stages. Initially, lending focused almost exclusively on expanding educational infrastructure, such as building schools, and on strengthening vocational and technical education. Then, in the 1970s and early 1980s, the Bank's support widened to include all aspects of education, including

Box 1. The Project Cycle

Bank lending follows a set of steps known as the project cycle. For the traditional specific investment loans (SILs), the Bank and borrower first jointly identify projects that have a high priority and appear suitable for Bank support. These are incorporated into a multiyear lending program that forms the basis for the Bank's future work in the country.

Second, the Bank and borrower collaborate over a one- or two-year period to prepare the project. Preparation is the responsibility of the borrower. It must cover the technical, institutional, economic, and financial conditions necessary to achieve project objectives, and it must include feasibility studies of technical and institutional alternatives.

Third, the project is appraised by Bank staff and consultants, who review all aspects of the project. Appraisal is solely the Bank's responsibility.

Fourth, the Bank and borrower negotiate agreements on necessary measures to ensure the success of the project, which are converted into legal obligations set out in the loan documents. After negotiations, the plan is submitted to the Bank's Executive Directors for approval, and the loan signed.

Fifth, the project is implemented. Implementation is the borrower's responsibility. The Bank supervises the project to help ensure that it achieves its objectives and to deal with problems that may arise during implementation.

Sixth, all projects are evaluated, and evaluations are subject to an audit by the Operations Evaluation Department (OED), which is separate from the Bank's operating staff to ensure objectivity. For a few selected projects, OED also prepares impact evaluation reports at least five years after the last disbursement.

Sectorwide loans follow the same basic pattern. Often with Bank support, the borrower develops a policy framework, a sector investment program, and criteria and procedures for appraising subprojects. This includes assigning an intermediary, such as the Education Ministry, to appraise, allocate funds for, and implement subprojects. The Bank appraises the program and approves the criteria and procedures for appraising subprojects. Negotiations and Board approval follow. The intermediary then prepares and appraises subprojects and implements them with Bank supervision.

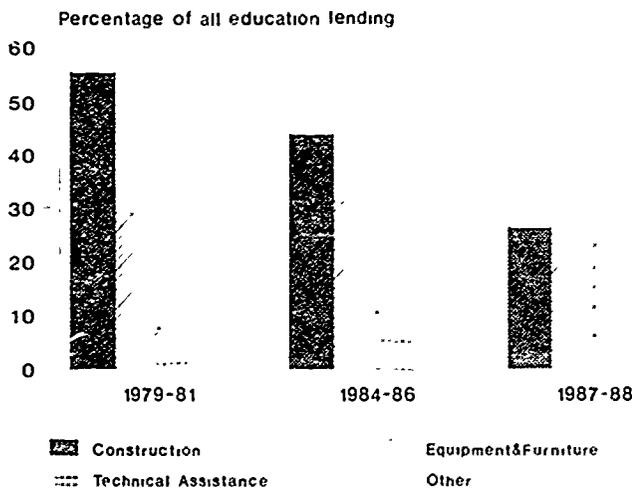
the quality of teaching and the effectiveness of educational institutions. In the later 1980s, many Bank-supported education programs have been intended to reach the poorest people and have emphasized primary education.

Bank loans support not only specific education projects but also broad institutional reform in the education sector. About half of all lending for education in fiscal 1987-88 was designed to support significant changes in education policy. This new focus reflects the Bank's growing awareness that even the best-designed projects will fail if educational policies are deficient. More school buildings and textbooks by themselves do not accomplish sustainable educational development, effective institutions and sound policies are also vital.

Within its broad objectives, the Bank's lending programs are flexible. As long as projects further educational development objectives and are economically, technically, and financially viable, the Bank can adapt its financing to the specific conditions of each country. The variety of arrangements available is suggested in box 2.

Bank financing in the education sector most often goes for school construction, procurement of equipment, technical assistance, and provision of fellowships for training (figure 3). Many projects also finance studies to help governments resolve policy issues or to evaluate education systems. Achievement testing and education monitoring and evaluation also receive high priority for support. In some cases, the Bank may provide financial support for project preparation.

Figure 3. Types of Expenditures in World Bank Education Projects, Fiscal 1979-88



Box 2. Types of World Bank Loans

SPECIFIC INVESTMENT LOANS (SILS) are the most frequent form of World Bank support for education. These are investments in projects that help create new educational and training capacity, improve the quality and efficiency of existing programs, or ensure their adequate maintenance. In this type of loan, the Bank's focus is on the economic and technical viability of a specific investment. Bank staff primarily appraise and supervise these loans, disbursing funds against specific works, products, and services over a period of five to seven years.

SECTOR INVESTMENT LOANS (SIMS) have become an increasingly important part of the Bank's education operations. Sector investment loans differ from specific investment loans in that they focus more on policy and institutional objectives and shift responsibility for detailed project design and implementation from the Bank itself to the borrower. SIMS typically finance a share of a country's broad sectorial investment program. In this type of loan, project appraisal and supervision are delegated to an intermediary institution, and disbursement usually takes place over three to seven years.

SECTOR ADJUSTMENT LOANS (SECALs) have recently been introduced in the education sector, in Morocco and Ghana, for example. They support comprehensive reforms of a country's entire education system. SECALs usually are extended to countries facing acute economic difficulties, where governments are ready to adjust educational policies to reflect their country's economic circumstances. The loans promote stepped-up mobilization of resources for education and their more efficient allocation to pave the way for resumption of economic growth. The loans are characterized by relatively quick disbursement.

HYBRID LOANS are a new lending instrument that combines both adjustment and investment features. This type of loan was initiated in the education sector with the Mali education consolidation credit approved in fiscal 1989. Hybrid loans are an alternative approach in poorer countries that need investment in educational infrastructure as well as sectorial adjustment. These nations typically face extreme shortages of classrooms and other facilities and need major rehabilitation of existing plant. At the same time, they require broad reforms to prevent further deterioration of educational standards.

The Bank will usually finance the recurrent costs of operating and maintaining a Bank-financed project in either of these cases.

- A country has a serious budget shortage for recurrent cost financing, and the Bank is satisfied that the country's policies aim to solve the

problem. Such Bank loans often call for institutional improvements or contain covenants intended to address the government's recurrent cost problem.

- A specific recurrent cost item plays a crucial role in the success of the project, and some Bank financing is desirable to ensure that the necessary funds are available on time. This happens mostly with pilot or experimental projects, where it is expected that the success of the project will lead the borrower to continue its support after the Bank's loan has been disbursed.

In many countries, the Bank has agreed to finance incremental recurrent costs of education projects on a declining basis. A project in Pakistan, for example, incorporated efforts to reduce recurrent costs per graduate by using low-maintenance buildings, reducing student dropout, and employing assistant teachers. Nonetheless, because of the severe difficulties encountered by provincial governments in meeting the start-up costs of the program, the Bank agreed to finance the additional recurrent costs generated by the project for an initial period, but then to phase out that type of finance.

In Haiti, a project objective was to improve the working conditions of education inspectors and teachers by paying them better salaries and requiring them to meet higher qualifications. However, when an economic crisis prevented large increases in the Ministry of Education's recurrent budget, the Bank agreed to finance the incremental costs of the increased salary bill on a decreasing scale. A project in Mexico currently supports government efforts to help find employment for poor, semi-skilled, or unskilled workers displaced by economic adjustment. Employment and labor training services are being improved and expanded. Training is being provided to 160,000 workers. To enable these workers to participate in training, the Bank loan partially supports cost-of-living stipends during the training period.

Bank Support for Education Policy Analysis and Research

To improve education, the developing world urgently needs a stronger base of research and policy analysis and a broader capacity for sharing this information. The Bank is sponsoring research on critical education issues, identified through its lending experience. In the past five years, the results of Bank research on education and training have appeared in

15 books and monographs, 20 journals, and more than 150 working papers.

Notable among the Bank's recent policy analyses is the study, *Education in Sub-Saharan Africa. Policies for Adjustment, Revitalization, and Expansion*. This report makes policy recommendations to reverse the decline in the quality of education and in the access to education throughout the region. A forthcoming report on primary education suggests steps to improve learning achievement, teacher training, and equitable access to education by girls, the poor, and other disadvantaged groups. A policy study also is forthcoming on the subject of vocational education and training.

The Bank's research is collaborative, involving both Bank staff and policymakers and scholars from developing countries. Bank research on education covers such topics as the financing of education, the education of women, the determinants of demand for education, and the cost-effectiveness of alternative investments. One intensive study, conducted in rural schools in northeast Brazil throughout the 1980s, was the first to provide solid evidence that specific investments to improve students' learning could reduce repetition and lower the cost of producing a student with four years of primary school.

The work of the Bank's Economic Development Institute centers on policy seminars and workshops designed to disseminate research findings and new policy directions. Fourteen activities related to education were carried out in fiscal 1988 and 1989, in all regions of the world, on such topics as education in Sub-Saharan Africa, educational finance, educational technology, and vocational education and training.

The Bank plays an important role in the international education community. With the United Nations Development Programme (UNDP), the United Nations Children's Fund (UNICEF), and the United Nations Educational, Scientific, and Cultural Organization (Unesco), the Bank is a principal sponsor of the 1990 World Conference on Education for All. The Bank attracts and helps to coordinate educational investments by other international donors at regional and international levels as well. For example, Donors to African Education was established in 1987 with the publication of the Bank's policy study on education in Sub-Saharan Africa. This group of more than thirty international agencies and selected foundations meets every two years with Sub-Saharan African ministers of education to coordinate assistance efforts.

Strategies for Educational Development: Twenty-Five Years of Experience

In the Bank's quarter century of support for education in developing countries, the most successful projects invariably have included three ingredients. (1) a careful analysis of the education sector itself, (2) a concentration of resources on a few key policy and institutional objectives, and (3) a persistent commitment by the Bank and the country alike to meeting these objectives.

The long-term partnership between the Bank and the borrowing country is important. As educational institutions and policies take hold in a country, borrowers shoulder increasing responsibilities for a project's development and implementation. These shared responsibilities lead to sustained institutional capacity in the education sector. The case of Ethiopia illustrates the elements of successful educational development.

ETHIOPIA. Bank activity in Ethiopia has spanned twenty-three years and included seven specific investment loans totaling \$224.7 million. Initial lending in the 1960s supported secondary, technical, and agricultural education to meet urgent manpower needs. In the early 1970s, with Bank support the government of Ethiopia conducted a critical review of the education sector and proposed to rapidly expand primary education and revise the curriculum. It also proposed to improve access to education by distributing schools better geographically, especially in rural areas, and by developing nonformal education for adults and children. The proposals called for a better match between the economy's manpower requirements and the country's secondary schools and institutions of higher education. Restructuring and decentralizing of the day-to-day operation of the education system were also recommended.

Subsequent Bank lending supported the improvement of agricultural and science training and the provision of thousands of primary and secondary school places in rural areas. The education curriculum was reformed, and a nationwide educational radio network was launched. National institutions for curriculum development, textbook production, school construction, and educational planning were strengthened through financial and technical support sustained over several operations. At the same time, Bank funds continued to support training of Ethiopians in veterinary medicine, agriculture, health, and teaching. Social science and other university level education was tailored to labor market requirements.

In this partnership, the Ethiopian government has made impressive efforts to increase educational opportunities for groups that were previously excluded. Enrollment ratios in primary and secondary schools have grown substantially. At the primary level enrollment has risen from only about 19 percent in 1974 to at least 47 percent today. The long-term nature of the partnership has helped Ethiopia build a sustained institutional capacity in education.

Primary Education

At the annual meeting of Bank Governors in Nairobi in 1973, Robert McNamara, then president of the World Bank, called for a major policy shift toward meeting the basic needs of the world's poorest people for food, shelter, clothing, clean water, health care, and education. Mr. McNamara questioned the conventional wisdom of concentrating investments on the modern sector in the hope that economic growth would "trickle down." Instead, he urged direct measures to benefit the rural poor.

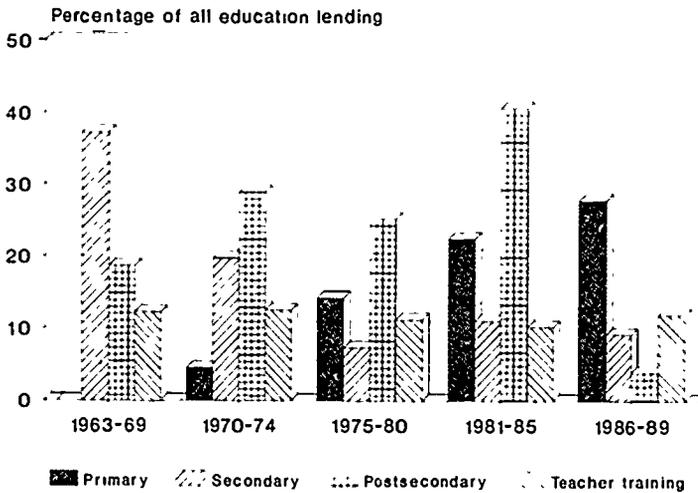
This new focus turned the attention of the Bank's educational lending to primary schools and nonformal settings to help build the broad foundation of literacy and problem-solving skills necessary for national development. Primary education has become a high priority for the Bank. Figure 4 shows the growing importance of lending for primary education since 1963.

Despite efforts to expand the reach of primary education and improve its quality, severe constraints remain throughout the developing world. Most primary students in low-income countries learn very little. One-third of those who enroll in primary school drop out. Millions of school-age children never set foot in a school room at all. The waste of human talent and potential is enormous.

A comprehensive Bank study of primary education, *Improving Primary Education in Developing Countries. A Review of Policy Options*, identifies key strategies to overcome the constraints on successful primary education. These strategies give priority to achievement in learning, quality of teaching, institutional capacity, equity of access, and effective mobilization and use of resources.

Better learning achievement requires a well-designed curriculum that emphasizes core subjects (especially reading and mathematics), more books and educational aids, longer hours of instruction, and better classroom teaching. To upgrade teacher preparation and build motivation will require improving the academic preparation of future teachers,

Figure 4. Composition of World Bank Lending for General Education, Fiscal 1963-89



Note. Support for vocational education and training is not included.

developing their pedagogical skills, and raising their morale. Strengthening institutional capacity will require better managers and better organizational structures that allow them to do their jobs effectively.

Implementing such strategies will cost far more than countries currently allocate to primary education. The financial basis for primary education must be strengthened in several ways—by using existing resources more efficiently, by spending more domestic resources on primary education, and by stepping up international donor support.

Achieving better equity of access to education for girls, the poor, and minor...s will require more than financial assistance—not only building classrooms and training teachers, but also increasing the demand for these services by reducing the cost to families and generating more community support for primary education. Training and hiring more women teachers, locating schools closer to students' homes, and providing sanitary facilities will also be essential.

The challenges are daunting, but the objectives can be achieved. Bank projects around the world are making headway against the forces that constrain primary education.

COLOMBIA. In Colombia, 30 percent of children in rural areas do not have access to primary education, compared with 10 percent of urban children. The Bank is supporting government efforts to extend primary education in rural areas and improve its quality. At the heart of these efforts is a system of multigrade instruction and flexible grade promotion known as the *escuela nueva* model. The system, which is locally managed, provides for complete primary education even in small schools in remote areas with only one or two teachers.

It is characterized by active, participatory instruction, a strong relationship between the school and the community, and a promotion system geared to the rural child. Students advance from one grade to the next at their own pace, enabling them to leave school temporarily to help with agricultural chores without jeopardizing their standing in school. Families and community members participate in school activities and help build and maintain the schools.

A Bank sector investment loan supporting the project provides incentives to keep teachers in remote areas (by offering housing loans and health insurance, for example) and introduces a cost-sharing scheme designed to increase local contributions toward upgrading school facilities. The Bank loan finances learning materials and libraries for 4,000 rural schools, training for 26,500 rural teachers, the replacement of educational materials at 25,000 rural schools, and the purchase of 3.3 million textbooks.

The *escuela nueva* program is now in 15,000 of Colombia's 25,000 rural schools, and the government plans to reach all schools in the next three years. The project is expected to improve the quality of education, and school completion rates for students in rural areas should rise from only 20 percent to 60 percent. Preliminary studies show that the performance of students attending *escuela nueva* is significantly above that of students in other rural schools and even in small urban areas. Analysis shows that *escuela nueva* children have much higher self-esteem than those enrolled in conventional rural schools. Particularly important, the self-esteem of girls in *escuela nueva* equalled that of boys, confirming the importance of a more participatory learning system in improving the ability of girls to benefit from classroom instruction.

BANGLADESH In conjunction with other agencies, among them Unesco and UNICEF, the Bank has supported strategies to address the particular needs for education of women and girls. These include more balanced and relevant primary curriculum, teaching materials, and textbooks. The

Bank is also supporting measures to enroll more girls in school and to recruit women into the education service. Among these measures are a satellite schools program to bring education closer to girls' homes, the creation of a Women in Development Unit in the National Curriculum and Textbook Board, and the recruitment of women teacher trainers as administrators.

Additional measures include better sanitary facilities for girls in primary schools, as well as laundry, study, and dormitory facilities for female student teachers. Improved primary and secondary curricula illustrate positive female roles and include components on nutrition, health, and population education. The collection and analysis of school data have been reorganized to make it easier to monitor progress in female enrollment and achievement. A successful program of scholarships for girls is being expanded.

Nonformal Education

Nonformal education—learning that is not part of a country's regular school system—provides the basic literacy crucial for development to adults who have had little or no formal schooling and to children who do not attend formal schools because they live too far away or their parents need them to work. It teaches adults basic health and nutrition, agriculture, and craft skills that improve their living standards.

To date, some 92 of the 375 Bank financed education projects have contained nonformal education components.

INDONESIA The Bank has loaned more than \$100 million to help Indonesia develop the administrative infrastructure to offer decentralized nonformal education services and a large literacy program. The program combines learning activities with activities that generate income for participants. Income-Generating Learning Groups get small grants to enhance their earning capacity, along with technical training and business management advice.

A group of women seamstresses, for example, might receive a grant to buy two sewing machines. When the group's performance reaches a certain level, it in turn sponsors another group, perhaps providing the new group with sewing machines. These grants require that all illiterate participants take literacy training. In 1982-83, 1.4 million Indonesians were enrolled in the literacy program, and 25,000 students were members of Income-Generating Learning Groups.

YEMEN ARAB REPUBLIC. The low level of adult literacy in Yemen (about 20 percent in 1982) is a major constraint to the country's development, especially in agriculture. The Bank has supported a flexible, nonformal program providing basic skills and literacy training, mainly in rural areas. Four education loans, totaling \$39 million, have helped build eleven District Training Centers (DTCs) where literacy training is offered.

Of the 10,000 literacy students initially enrolled in the nonformal program established in 1975, 10 percent completed enough courses to qualify them to enter the first grade of the lower secondary schools. Participants in DTC training programs multiplied tenfold, from 2,200 in 1979-80 to 22,000 in 1983-84. Encouraged by the response, the government is expanding the training program throughout the country.

The program created the innovative Basic Training Fund, which provided the DTCs with financing to set up village training units in areas surrounding the main centers. This flexible funding tool proved remarkably successful in encouraging locally identified development in remote areas. Policy decisions are made by high-level management, but these decisions are influenced by community members who report on the success or failure of the local projects.

Secondary Education

Secondary education is important to development because it provides students with a bridge to higher education, while preparing young people for employment and enabling them to continue learning throughout their lifetime. In many countries secondary education has also had as a major objective preparing enough teachers so that governments could expand primary schooling.

Enrollments at the secondary level in developing countries have grown faster than enrollments in primary school and started from a much smaller base. In 1986, gross secondary school enrollment ratios, including enrollment in vocational schools, were 23 percent for Africa, 40 percent for Asia, 48 percent for the Middle East and North Africa and 52 percent for Latin America. As these figures suggest, there is great variation in access to secondary education. Only 6 percent of the children of secondary school age in Chad were enrolled in 1986, compared with fully 93 percent in Korea.

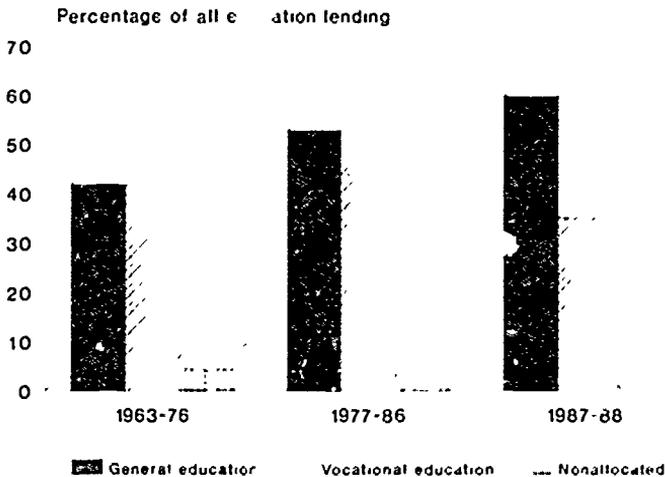
In many countries, there are more secondary graduates than can be absorbed by institutions of higher education or the labor market. The unfortunate result is high unemployment and underemployment

among educated people. In response, countries often increase their commitment to vocational schooling in the expectation that it will ease students' transition to work. But this approach has been effective only in rapidly industrializing economies.

Much of the Bank's support for education at the secondary level has been for vocational schooling, though the level of support has fallen in the 1980s (figure 5). The Bank has also supported training programs for primary school teachers at the secondary level. Between 1963 and 1984, more than half of all Bank education projects included a teacher-training component.

In secondary education, the challenges are to develop curricula that are relevant to people's lifelong intellectual needs and to find low-cost ways to extend access. A strong preparation in language, science, mathematics, and technology not only gives students a foundation for higher education but also gives them some flexibility in the search for employment and some basis for continuing learning in adulthood. Experiments with secondary education through correspondence and radio lessons have produced encouraging results, extending educational access at comparatively low cost and providing in-service training for teachers.

Figure 5. Distribution of World Bank Investments in Education, by Category, Fiscal 1963-88



THAILAND Concern over the skills and attitudes of secondary school graduates led Thailand to experiment with diversified secondary school curricula in the late 1960s, initially with support from the Canadian International Development Agency. The small-scale experiment gained momentum during the education reform movement in 1973 and has been gradually expanding ever since with the support of four Bank-assisted projects.

Key to the program's success has been incremental expansion, flexibility in adapting to changing needs, and development of strong national and local organizations. Bank support has financed the introduction of diversified curricula in 480 existing secondary schools and in 124 new secondary schools built under the project. In addition to academic subjects, the project schools offer prevocational courses in agriculture, home science, commerce, and farm mechanics. The program's objectives have gradually shifted from a focus on the labor market performance of graduates to a broader concern with general skill development and attitude change.

SENEGAL Bank support in Senegal has included financing efforts to expand and strengthen science teaching, so that students who enter general, technical, and vocational programs at the upper secondary level or who leave school to enter the labor market will be better qualified. The project helped construct and equip eleven centers for instruction in practical science, technology, and domestic science. These centers serve some thirty-one schools located in areas where short distances between schools enable more efficient sharing of facilities and related specialist services. The project also provided technical assistance for program development and teacher training, as well as strengthening education planning and management.

Vocational and Technical Education

Vocational and technical education and skills training have long been a cornerstone of Bank investment. Recognizing the important role that skilled workers and technicians play in improving productivity, the Bank has supported 160 projects in seventy-one countries since 1963, with a total investment of more than \$5 billion by the Bank and its borrowers. Projects have supported vocational schools, vocational training centers, and secondary and postsecondary technical education institutions.

investments in vocational education and training have been tied closely to economic development strategies. The results have been impressive. Students have readily found employment, and productivity and earnings have risen in the rapidly growing economy.

JORDAN. A long-term partnership between Jordan and the Bank contributed to the development of a flexible system of vocational education and training. The creation of the Vocational Training Corporation (VTC) led to effective training partnerships with employers. Trainees enroll in a dual system that combines basic and theoretical instruction in VTC training centers with supervised apprenticeship in the cooperating firms. The efficiency of the system is improved by reducing the amount of time trainees must be out of employment and by requiring employers to share costs for instructors, facilities, and equipment during apprenticeship.

Higher Education

Higher education plays a critical role in development as the source of top management, professional leadership, and technical innovation. A nation looks to its colleges and universities for much of its capacity for economic and social research and for the development and adaptation of new technology.

Since 1964, the Bank has lent about \$3 billion for higher education, including postsecondary formal schooling and postgraduate study and research. These loans account for about 27 percent of the Bank's total investment in education. More than 203 education projects have included higher education components. Nearly 60 percent of higher education lending has been concentrated in Asia, and 28 percent in Europe, the Middle East, and North Africa.

Early Bank lending for higher education focused on training teachers for secondary schools. More recently, the Bank has emphasized development of capacity in mid- and high-level science, engineering, and agricultural personnel and research facilities. The aim is both to meet immediate manpower needs and to develop a national infrastructure for research and development of modern technology.

In more industrialized nations, such as Brazil, China, Indonesia, and Korea, the Bank emphasizes upgrading the higher education system. In poorer countries, such as Burundi, Ghana, Mali, and Mauritania, Bank investment in higher education concentrates on improving institutional quality and efficiency

Issues of quality, efficiency, and equity are central to the future of higher education in the developing world. Improving quality requires adequate financing and effective policies not only to strengthen teaching, but also to enhance the roles that institutions of higher education play in providing intellectual, scientific, and technical support for development. The Bank is concerned both with internal efficiency—how well higher education systems function—and with external efficiency—how enrollments can better match labor market demand.

The Bank also encourages countries to diversify their higher education systems by expanding polytechnical institutes and junior colleges and by permitting and encouraging the establishment of private institutions of higher education. In many countries distance education—which relies on radio, television or correspondence lessons to permit students to study outside of formal classrooms—also provides a low-cost means of delivering higher education.

INDONESIA. The Bank has supported major structural reforms of the higher education system in Indonesia. These reforms include shifting from a rather rigid program oriented system to a more flexible credit hour system. The change speeds students' passage through university and thus makes the use of facilities more efficient. Investments have also helped develop a resource sharing system that provides for more efficient use of existing facilities among universities. Incentives to help strengthen private higher education are also part of the education policy.

CHINA The Bank has provided China nearly \$550 million in support to strengthen 124 universities in science and technical fields and to help finance two other cost-effective systems of postsecondary education, a network of polytechnic institutes and a nationwide Television University (TVU) system. These projects demonstrate that it is possible to undertake large-scale improvement and modernization in education and research within a short time, if institutions and professional manpower are available.

A large-scale Bank equipment program provided laboratories and computer centers to China's universities. The Bank also financed facilities and equipment for seventeen polytechnic institutes and funded equipment, a production center, laboratories, and a printing house for China's Central Radio and Television University. Bank support provided equipment and technical assistance to the provincial television universities as well.

Science and Technology

In science and technology the pressing challenge is to narrow the gap between the industrial and the developing countries in their research capacity and in their ability to acquire and adapt technology. In industrial countries, scientific and technological change is fast transforming occupations and production processes. Demand is increasing for workers with advanced training in such diverse fields as computer science, robotics, materials science, laser technology, and biotechnology. To meet this demand, public and private sectors are investing heavily in training workers in the manufacturing and service sectors.

In middle-income countries, it is now a high priority to improve the productivity of the labor force and to become more competitive internationally by adapting and applying new technologies and improving management. High-level technicians and engineers are often in short supply in these countries. In addition to strengthening their universities and colleges, these countries must develop their research institutions and science and technology services to support the rapid changes taking place in industry and technology.

In poorer countries, efforts must be made to ensure that the education systems can meet the country's needs for professional personnel and technologies to support development goals. But efforts in science and technology cannot be pursued at the expense of basic education, which provides the foundation for effective science and technology learning.

KOREA. The Bank has supported technology development in Korean industry since the mid-1970s. Bank activities have been in the areas of heavy machinery, electronics technology, small and medium industry, and science and technology education. The Korea Technology Development Project provides financial assistance to research and development projects in the private sector and projects sponsored by industry but carried out by public research institutes. This Bank loan strengthens the links between research institutes and industry.

BRAZIL Through a sector investment loan the Bank is helping Brazil build its science and technology subsector. The government's policy is to develop national capacity to select and generate technologies for economic and social growth by improving and expanding research and development activities. This policy is hampered, however, by a shortage of qualified personnel, by ineffective management, and by inadequate

financing and coordination. The project seeks to overcome these obstacles by providing financial support to about 1,000 subprojects for research and human resource development, including teacher training in the sciences at the secondary level.

Policy Reform and Adjustment

The Bank increasingly supports broad policy reforms in education because they are critical to building strong education systems in developing countries. Even the best-designed project will fail when the sectoral policy environment is distorted. Sector adjustment loans have financed major reforms of education policy and education systems in several countries.

GHANA. A Bank sector adjustment credit supports the reform of the national education system, as part of the government's national plan for economic recovery and sustained growth. The program seeks to improve educational quality and make financing of education more cost-effective. A key feature of the reform that addresses both these goals is the reduction of education before the university level from seventeen to twelve years. The resources saved through this policy change and through measures to increase cost recovery and reduce costs per pupil will make it possible to widen poor children's access to primary education.

Until the mid-1970s, Ghana had one of the most developed education systems in West Africa, with one of the highest rates of school enrollment anywhere in Sub-Saharan Africa. But along with the sharp economic decline of the 1970s came a steep drop in educational quality and a decline in school enrollments. Until very recently, there was an exodus of trained teachers from the country, who were replaced by untrained personnel. The proportion of Ghana's gross domestic product devoted to education dropped from 6.4 percent in 1976 to 1.7 percent budgeted in 1985.

The government's reform program seeks to ensure that primary school enrollments grow at 5 percent annually, slightly more than the annual growth in school-age population at that level, that secondary school efficiency is doubled, and that residential enrollments in teacher training colleges are increased by 20 percent. The program includes measures to restructure the school system, improve curricula and teacher training, reduce the government share of recurrent costs for education, and make planning and management more effective.

In order to improve the efficiency of education, the government is deemphasizing secondary boarding schools in favor of day schools, phasing out subsidies, and freezing the number of teachers and non-teaching staff.

Support for Education in Other Sectors

In addition to its support for activities within the education sector, the Bank also provides assistance for staff development and training in other sectors of the economy, including agriculture and rural development, population, health, and nutrition, industry, transportation, and telecommunications, and urban development and water supply. These investments in human capital are made through components in investment projects and are considered essential to the productive use and effective maintenance of new facilities and equipment. The World Bank's annual support for training activities related to projects currently averages \$285 million.

Bank financing supports the design and delivery of training activities in many sectors. It is increasingly focused on the development of sustainable national training capacity, with the objective of reducing dependence on external training expertise. These investments often support sectoral or specialized training agencies, principally in agriculture, but also in accountancy, construction, public administration, and other sectors of the economy.

SRI LANKA. Economic expansion in the late 1970s, as well as a large program of public investment in infrastructure, put great strain on Sri Lanka's construction industry. A principal constraint was lack of skilled construction workers, equipment operators, supervisors, and senior managers. Two IDA credits supported government programs to overcome the skills constraint. They have accelerated training for more than 45,000 skilled and managerial staff. To minimize costs, training was carried out in the existing facilities of Ministries of Education, Labor, Youth and Sports, and Rural Development, as well as at construction sites. Training time was reduced by carefully identifying skill requirements and then developing modular training courses to achieve the required basic skill levels. The institutional capacity to organize and finance training and to promote the development of local contractors was established in the Ministry of Local Government, Housing, and Construction. The credits financed training equipment, tools, and materials, and technical assistance.

Directions for the 1990s and Beyond

In the 1990s and into the next century, the Bank will strengthen its support of government efforts to improve education and training. Building on the foundation of its long-term commitments, the Bank will give priority to six areas:

- Improving the effectiveness and efficiency of primary education
- Increasing the access of women and girls to education
- Strengthening science and technology education
- Improving the efficiency and flexibility of training systems
- Strengthening the contributions of higher education and science and technology institutions to development
- Continuing support for project-related training and the development of sectoral training capacity.

With these priorities in mind, the Bank will base its programs on an analysis of several critical education issues—the relationship between education policies and the national economy, the feasibility of implementing educational reforms, and the capacity of national institutions to carry out education policies. Employment policies and programs, and their relationship to education and training, will receive considerable emphasis. The Bank will maintain its flexible and collaborative approach, seeking to understand the unique needs of each country in order to respond most effectively.

Providing better access, improving efficiency, and accelerating learning are ambitious goals, but goals that are within reach of education systems throughout the developing world if there is strong determination and commitment. National governments and international donors together must provide the needed intellectual and financial resources. At stake are the development hopes of nations and the future of millions of children.

Education is fundamental to social welfare and economic development. Investing in education is becoming increasingly important as the pace of technological change quickens, populations grow ever larger, and economies become more interdependent. Bank President Barber B. Conable has stated, "In the new century, the dividends from knowledge will grow as the penalties for ignorance increase . . . Education, and human resource development more broadly, must be a central focus of the development effort in the 1990s." The Bank makes this commitment to meeting the challenges of educational development.

Appendix:
World Bank Education Projects Being
Implemented in 1990

Region and first year of implemen- tation	Country	Project	World Bank lending				Total project cost	
			IBRD amount	IDA amount	Total loan and credit amount	Government financing		Co- financing
1987	Rwanda	Education III—Primary Education	0.0	15.6	15.6	2.1	1.3	19.0
	Comoros	Education II—Teacher Training and Vocational Education	0.0	7.9	7.9	0.9	0.0	8.8
	Equatorial Guinea	Education I—Primary Education	0.0	5.1	5.1	0.3	1.0	6.4
	Ghana	Education Sector Adjustment	0.0	34.5	34.5	12.8	416.6 ^a	463.9
	Malawi	Education Sector Credit	0.0	27.0	27.0	4.4	2.6	34.0
	Niger	Primary Education Development	0.0	18.4	18.4	1.4	6.4	26.2
	Senegal	Primary Education Development	0.0	12.0	12.0	2.3	5.3	19.6
	Zaire	Higher Education Rationalization	0.0	11.0	11.0	1.2	0.0	12.2
1988	Burundi	Education Sector Development	0.0	31.5	31.5	4.5	1.5	37.5
	Cape Verde	Primary Education Upgrading	0.0	4.2	4.2	1.1	0.0	5.3
	Central African Rep.	Education Rehabilitation and Development	0.0	18.0	18.0	1.3	1.3 ^b	20.7
	Ethiopia	Education VII—Technical Education and Teacher Training	0.0	70.0	70.0	25.2	0.0	95.2
	Guinea sau	Education—Primary	0.0	4.3	4.3	0.4	0.0	4.7
	Mozam- bique	Education and Manpower Development	0.0	15.9	15.9	2.0	0.0	17.9
	Nigeria	Technical Education	23.3	0.0	23.3	3.0	1.2	27.9

Region and first year of implemen- tation	Country	Project	World Bank lending					Total project cost
			IBRD amount	IDA amount	Total loan and credit amount	Govern- ment financing	Co- financing	
1989	Chad	Education Rehabilitation	0.0	22.0	22.0	1.4	1.8	25.2
	Mali	Education Sector Consolidation	0.0	26.0	26.0	14.7	15.5	56.2
	Mauritania	Education Sector Restructuring	0.0	18.2	18.2	0.7	18.6	37.5
	Uganda	Education IV—Primary Education	0.0	22.0	22.0	5.9	0.0	27.9
<i>Asia</i>								
1983	Indonesia	Polytechnic II	107.4	0.0	107.4	58.4	0.0	165.8
	Philippines	Vocational Training	24.4	0.0	24.4	17.3	0.0	41.7
1984	Bangladesh	Technical Education	0.0	36.0	36.0	15.3	10.9	62.2
	China	Agricultural Education II	45.3	23.5	68.8	133.8	0.0	202.6
	Indonesia	Nonformal Education	43.0	0.0	43.0	28.6	0.0	71.6
	Papua New Guinea	Secondary Education	49.3	0.0	49.3	26.5	2.7	78.5
1985	China	University Development II	0.0	145.0	145.0	1,017.0	0.0	1,162.0
	Indonesia	Secondary Education I—Management Training	78.0	0.0	78.0	51.5	0.4	129.9
		University Education II	147.0	0.0	147.0	97.5	0.0	244.5
		Nepal	Agricultural Manpower	0.0	8.4	8.4	0.7	4.1
1986	China	Provincial University	0.0	120.0	120.0	357.0	0.0	477.0
	Indonesia	Manpower Development and Training	58.1	0.0	58.1	33.0	0.0	91.1
		Science and Technical Training	93.0	0.0	93.0	60.7	0.0	153.7
		Malaysia	Industrial Training II	73.3	0.0	73.3	44.6	3.1
			Primary and Secondary Education Sector	127.0	0.0	127.0	185.8	0.0

Region and first year of implemen- tation	Country	Project	World Bank lending					Total project cost
			IBRD amount	IDA amount	Total loan and credit amount	Govern- ment financing	Co- financing	
1988	Solomon Islands	Education II—Secondary Education	0.0	5.0	5.0	0.7	4.3	10.0
	Sri Lanka	Vocational Training II	0.0	15.0	15.0	8.6	1.0	24.6
	Bhutan	Primary Education	0.0	4.2	4.2	2.0	7.4	13.6
	China	Teacher Training	0.0	50.0	50.0	54.8	0.0	104.8
	Indonesia	Higher Education	140.3	0.0	140.3	117.0	0.0	257.3
1989	Indonesia	Accountancy Development	113.0	0.0	113.0	51.5	0.0	164.5
	Malaysia	University Development	48.2	0.0	48.2	33.2	0.0	81.4
	China	Textbook Development	0.0	57.0	57.0	57.5	0.0	114.5
	Indonesia	Tree Crops Human Resource Development	18.4	0.0	18.4	8.2	0.0	26.6
	Lao PDR	Polytechnic Development	0.0	3.5	3.5	2.2	13.0	18.7
1990	Korea	Technology Advancement	16.4	0.0	16.4	13.6	0.0	30.0
	Malaysia	Primary and Secondary Education II	58.8	0.0	58.8	101.0	0.0	159.8
	Maldives	Education and Training	0.0	8.2	8.2	1.2	0.0	9.4
	Nepal	Engineering Education	0.0	11.4	11.4	2.1	12.5	26.0
	Nepal	Earthquake School Rehabilitation	0.0	22.8	22.8	3.7	3.7	30.2
1990	Vanuatu	Primary and Secondary Education	0.0	8.0	8.0	2.1	7.7	17.8
	India	Vocational Training	30.0	250.0	280.0	149.8	0.0	429.8
	Indonesia	Public Works Institutional Development and Training	36.1	0.0	36.1	17.9	0.0	54.0

Region and first year of implemen- tation	Country	Project	World Bank lending			Govern- ment financing	Co- financing	Total project cost
			IBRD amount	IDA amount	Total loan and credit amount			
<i>Europe, Middle East, and North Africa</i>								
1984	Turkey	Industrial Training I	36.8	0.0	36.8	7.6	0.0	44.4
1985	Pakistan	Primary Education II	0.0	52.5	52.5	20.5	0.0	73.0
	Morocco	Vocational Training I	27.1	0.0	27.1	16.8	0.2	44.1
	Turkey	Industrial Schools	57.7	0.0	57.7	15.0	0.0	72.7
1986	Pakistan	Vocational Training II	0.0	40.2	40.2	30.4	22.7	93.3
	Yemen Arab Republic	Technical Training	0.0	12.7	12.7	8.2	7.2	28.1
1987	Pakistan	Primary Education III	0.0	145.0	145.0	41.2	21.7	207.9
	Turkey	Nonformal Vocational Training	58.5	0.0	58.5	12.6	0.0	71.1
	Yemen Arab Republic	Teacher Training	0.0	10.4	10.4	8.8	0.9	20.1
1988	Algeria	Vocational Training	54.0	0.0	54.0	47.3	0.0	101.3
	Jordan	Education VII—Basic-Primary Education	40.0	0.0	40.0	65.8	2.5	108.3
	Turkey	Industrial Training II	115.8	0.0	115.8	50.0	0.0	165.8
1989	Morocco	Rural Primary Education	83.0	0.0	83.0	42.0	40.0	165.0
<i>Latin America and the Caribbean</i>								
1984	Brazil	Technician Training	20.0	0.0	20.0	25.4	0.0	45.4
	Faraguay	Vocational Education	5.0	0.0	5.0	2.8	0.0	7.8
1985	Brazil	Science and Technical Education	72.0	0.0	72.0	143.4	0.0	215.4
	Dominican Republic	Vocational Education	5.8	0.0	5.8	2.3	0.3	8.4
	Haiti	Education IV—Technical Education and Vocational Training	0.0	10.0	10.0	6.3	6.0	22.3

Region and first year of implementation	Country	Project	World Bank lending			Government financing	Co-financing	Total project cost
			IBRD amount	IDA amount	Total loan and credit amount			
1986	Peru	Primary Education II	27.0	0.0	27.0	19.8	0.0	46.8
	Barbados	Education II—Primary, Secondary, Technical Education, and Vocational Training	10.0	0.0	10.0	10.7	10.7	31.4
1987	Brazil	Skills Formation	74.5	0.0	74.5	29.0	62.9 ^d	166.4
	Caribbean region	Caribbean Development IV—Regional Vocational and Technical Education	0.0	6.0	6.0	1.7	5.3	13.0
1988	Honduras	Rural Primary Education Management	4.4	0.0	4.4	2.5	0.0	6.9
	Jamaica	Education Program Preparation and Student Loans	8.3	0.0	8.3	2.8	0.0	11.1
1989	Mexico	Manpower Training	80.0	0.0	80.0	35.7	40.3 ^c	156.0
	Bahamas	Technical and Vocational Training II	10.0	0.0	10.0	7.4	0.0	17.4
	Colombia	Primary Education Subsector II	100.0	0.0	100.0	69.2	0.0	169.2
	Guatemala	Basic Education II	30.0	0.0	30.0	38.3	0.0	68.3

Note: Projects listed are those with assigned closing dates after June 1990

- a. Includes \$58.6 million from private sources (parents and cost recovery)
- b. Includes \$1.2 million from Parents' Association.
- c. Financed by local communities.
- d. Financed by SENAI-SENAC
- e. Financed by enterprises



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