

Chapter 19

Education

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19.1 Introduction

This chapter is designed as a guide for developing the education policy component of a Poverty Reduction Strategy Paper (PRSP). It provides diagnostic tools and research findings that can help countries identify the policies and programs likely to have the most powerful impact on education opportunities and outcomes for poor children and illiterate adults within their country context.

Section 19.2 presents the rationale for investing in education as part of a strategy for poverty reduction. It also lays out a conceptual framework for understanding how education sector policies and other factors combine to produce education outcomes.

Section 19.3 focuses on diagnosing education system performance. Good policy begins with sound diagnosis. A three-step process is proposed: (1) benchmarking key education outcomes, (2) analyzing public and private expenditures on education, and (3) using decision-tree analysis to probe more precisely the underlying causes of poor outcomes in a particular country.

Section 19.4 focuses on reform strategies and high-impact programs. Drawing from country experience and research, it summarizes what we know about policies and programs that can redress the problems identified, and looks at the experience to date of low-income countries that are seeking to improve education for the poor. This section analyzes the key policy levers available to ministries of education to improve the delivery of formal education services. It also reviews international experience with the design and delivery of nonformal basic education for youths and adults. Finally, it considers the key policies in other sectors that can have an important impact on education outcomes for the poor, specifically macroeconomic and fiscal policies and the delivery of complementary social services, notably early childhood interventions and child health and nutrition programs.

Section 19.5 provides guidance on assessing the political and institutional feasibility of alternative policies and programs and on setting priorities. It offers suggestions for estimating the costs and implementation timeframe for priority policies and programs, sequencing these realistically, and monitoring and evaluating progress.

Countries engaged in the PRSP process typically face major constraints on resources and capacity and are under time pressure to show measurable progress. It is not expected that all countries will have the data or the time to carry out the full diagnostic process set out in this chapter, nor will they all have the capacity to implement the full range of reforms discussed in Section 19.4. The “good practice” analytical approach and broad overview of relevant country experience with education reform presented here are intended to provide a comprehensive resource from which client countries can select the tools and policy options that are most feasible and relevant in their context. It is hoped that this resource will contribute directly to the development and implementation of effective poverty reduction strategies.

19.2 Education and Poverty

19.2.1 The importance of education for poverty reduction strategies

Inadequate education is one of the most powerful determinants of poverty, and unequal access to educational opportunity is a strong correlate of income inequality. One out of every five children in developing countries—more than 113 million children—lacks access to schooling, and some 880 million adults are illiterate. Two-thirds of those out-of-school children and illiterate adults are female. One out of every four children who enter school drops out before completing five years of primary education or acquiring sustainable literacy. At current rates of education expansion, it is projected that by 2015 more than 100 million school-aged children will still not be in primary school.

Failure to provide basic education seriously compromises a country’s efforts to reduce poverty. A large body of research points to the catalytic role of basic education for those individuals in society who are most likely to be poor—that is, girls, ethnic minorities, orphans, people with disabilities, and people living in rural areas. Basic education or literacy training, of adequate quality, is crucial to equipping disadvantaged individuals with the means to contribute to and benefit from economic growth. Education is one of the most powerful instruments societies have for reducing deprivation and vulnerability: it

helps lift earnings potential, expands labor mobility, promotes the health of parents and children, reduces fertility and child mortality, and affords the disadvantaged a voice in society and the political system.

Education investments are also crucial for the sustained economic growth that low-income countries are seeking to stimulate, and without which long-term poverty reduction is impossible. Education directly contributes to worker productivity, and can promote better natural resource management and more rapid technological adaptation and innovation. It is fundamental to the creation of a competitive, knowledge-based economy, not only for the direct production of the critical mass of scientists and skilled workers that every country requires—no matter how small or poor—but also because broad-based education is associated with faster diffusion of information within the economy, which is crucial for enabling workers and citizens in both the traditional and modern sectors to increase productivity (Porter 1998, and Hanushek and Kimko 2000).

These impacts are strongest where education is integrated into a broader competitiveness strategy that includes macroeconomic stability, trade openness, incentives for foreign investment, competitive telecommunications pricing, and adequate infrastructure investments. No 21st century economy can expect to develop a productive workforce that is able to take advantage of globalization without a well-functioning education system. A growing body of research also documents the connections between education, the quality of institutions, and social cohesion: nations in which most of the population is literate and in which all children complete at least a basic education have higher-quality institutions, stronger democratic processes, and, as a consequence, more equitable development policies (Ritzen, Easterly, and Woolcock 2000).

Since research points strongly to the economic and social benefits of universal primary education, this chapter focuses on policies for expanding the coverage and improving the quality of that segment of the education system (a five- to nine-year cycle, depending on the country) and for increasing adult literacy through cost-effective programs. Consistent with the International Development Goals and the commitments made by the 184 countries at the 2000 Dakar Education for All (EFA) forum, three goals are taken as cornerstones of the education component of any poverty reduction strategy: (1) raising the percentage of children who complete a primary education of adequate quality, with the goal of achieving universal primary education by the year 2015; (2) eliminating gender disparities in primary education by 2005; and (3) increasing the percentage of the adult population that is literate.

International forums on education have rightly stressed the need to eliminate gender disparities in education access and opportunities. Research shows that investments in girls' education yield some of the highest returns of any development investment, fostering higher rates of female participation and productivity in the labor market and raising economic output. Educating girls directly improves family welfare, reducing some of the most pernicious effects of poverty. With even a few years of formal education, women are more likely to plan their families and have fewer children; to seek pre- and postnatal care, lowering maternal and infant mortality; and to provide children with better nutrition, ensure they are immunized, and procure appropriate medical care, thereby reducing child mortality. Educated girls and women are more likely to send their children to school and to keep them there longer, and are more receptive to the adoption of environmentally friendly technology that can protect natural resources.

Adult literacy programs are also important in poverty reduction strategies. While the universalization of primary education for children should eventually eradicate adult illiteracy, countries with high illiteracy rates cannot afford to wait a generation for the beneficial impact on incomes and poverty that literacy brings. Nonformal programs that impart literacy and other basic skills to adults and out-of-school youths can directly improve family income generation and have strong positive impacts on family health status, children's educational attainment, and the sustainable management of local natural resources. A widely reported outcome among adult learners is a sense of empowerment and an ability to act with greater confidence in public arenas.

Adult basic education is important on equity grounds because it tends to be self-targeted to the most impoverished groups. It is especially important from a gender perspective, because women outnumber men in most adult basic education programs, sometimes by wide margins. In short, as an interim strategy until universal primary education is achieved, nonformal education programs can equip the poor for

economic development and social participation and can thereby promote the development of a broad-based and more equitable society.

Even countries far from achieving universal primary education and adult literacy must think about the balanced development of *all* levels of their education system. Countries are under increasing pressure from communities to expand coverage of preschool education, and research shows that early childhood programs can have a payoff for primary education by boosting student attainment and learning, especially among at-risk students. Progress in expanding enrollment in primary education quickly creates pressure for the expansion of secondary school and tertiary education, and it is important to put in place a policy framework for expanding these levels that ensures quality, relevance, equity, and financial sustainability. The secondary and tertiary levels are the levels that produce science and technology capability—which is crucial for economic growth and technology adaptation and innovation—and that also directly determine the quality and supply of professors, teachers, and education administrators. Since costs per student in secondary and tertiary education are substantially higher than in basic education, reforms to improve efficiency and equity at these levels can also be important to underpin strategies for basic education improvement. Whatever their level of resources, countries must strive for a balanced and efficient development of their overall education systems.

Complicating this challenge in many low-income countries is the HIV/AIDS pandemic, which poses a major threat to education systems. The worst-affected countries are in East and Southern Africa, but the epicenter is shifting toward West Africa and Asia, and countries in Eastern Europe, Central Asia, and Latin America will also face problems. Many African countries are already struggling to produce adequate numbers of new teachers, with more than 10 percent of teacher training graduates forecast to die of HIV/AIDS within five years of entering the service. With this level of attrition, it is imperative not only that teachers be trained in larger numbers, but also that they be trained more cost-effectively. An even larger issue for school systems is the 35 million or more children who are projected to lose their mothers to AIDS in Africa this decade—in some countries, as much as 20 percent of the school-aged population. Without special assistance, these children, who often have no other source of family income and often have younger siblings to take care of, are at high risk of dropping out of school and perpetuating the cycle of poverty.

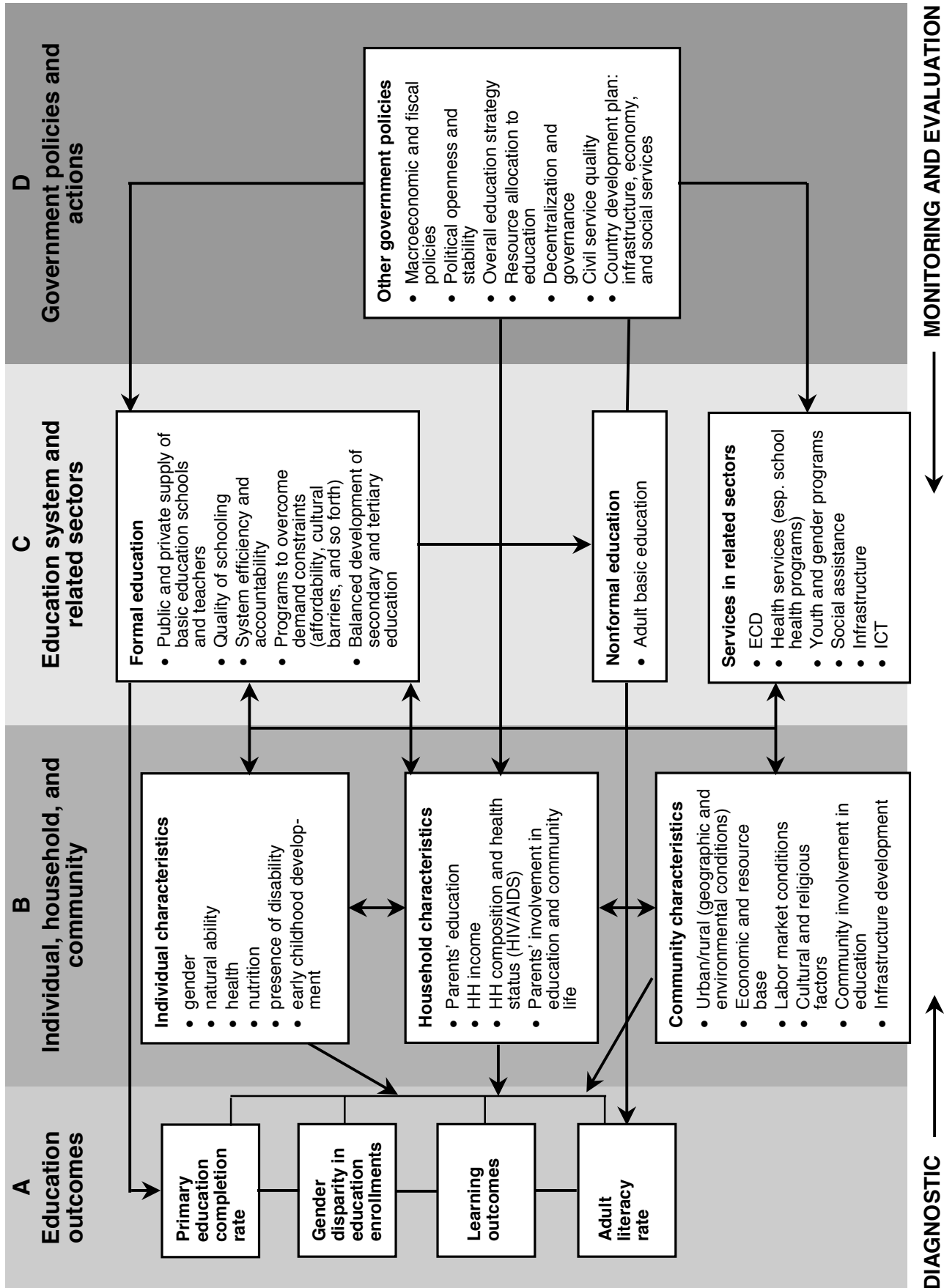
In sum, long-term plans for education must embrace policies across all levels and all types of education and training. In a significant number of PRSP countries, especially in Eastern Europe and Central Asia, universal completion of primary education has already been achieved and 100 percent of adults are literate. In these countries, the focus of a PRSP education component will shift to issues of quality (especially curriculum relevance), efficiency, and financial sustainability across all levels of the system, and to expanding the participation of low-income students at higher levels of education.

19.2.2 A conceptual framework

Education outcomes are influenced by many factors, only some of which are directly controlled by education policymakers. Figure 19.1 presents a conceptual framework for understanding education outcomes in general, and the barriers and policies that affect the education of the poor in particular. It starts with key outcomes on the left (column A) and works back through the individual, household, and community factors that influence educational outcomes (column B) to government policies and actions, both at the sectoral level (column C) and at the macroeconomic level (column D). In this framework, sectoral diagnosis proceeds from the left side, working backward from desired outcomes through an analysis of the causal factors on the right. Conversely, monitoring and evaluation can start from the right side and move left, tracing the ways in which government policies and actions work down through individuals and communities to produce educational results.

Key education outcomes. Column A shows the education outcomes most directly related to poverty reduction: the primary education completion rate, gender disparity in basic education, student learning, and the adult literacy rate. (The rationales for these indicators, for intermediate indicators that are linked to these outcomes, and for the measurement issues involved in tracking them are discussed in section 3.1.)

Figure 19.1. Determinants of Education Outcomes



Individual, household, and community factors. Education outcomes are powerfully linked to individual factors such as aptitude, motivation, gender, the presence of physical or mental disabilities, and access to early childhood nutrition and stimulation programs. The last of these is especially important for at-risk students. Research also documents that students' school attainment and learning are correlated with household income, birth order, and, importantly, the education level of parents—especially of the mother. Catastrophic family health problems or the loss of a parent can also affect students' school attendance and progress, and both of these, linked to HIV/AIDS in many countries and to civil war and conflicts in others, are increasingly disrupting children's schooling participation and attainment in many African countries.

A range of community factors also have an impact on education. The availability or lack of roads, public transport, water, and electricity affect the cost of making schooling accessible to all children. Good electricity and telecommunications infrastructure can make possible quantum leaps in schooling quality by enabling the use of computers and the Internet to support distance delivery. Access to early childhood development programs, nutrition programs, and health care facilities makes for healthier and more successful students, while the availability of jobs for school leavers in the local or regional labor market strongly influences the demand for education.

Education system performance. Public education typically absorbs 2 to 5 percent of GDP and is often the largest (nondefense) sector in the overall government budget. Additionally, private spending on education can often represent an equivalent amount. Every society in the world devotes huge resources to formal education systems. System performance, however, varies widely across countries in terms of quality, coverage, and efficiency. Many low-income countries spend a percentage of national resources on education equivalent to the percentage spent by more developed countries, but produce much lower outcomes. The special challenge for heavily indebted poor countries (HIPC) and other low-income countries is to achieve a major improvement in the returns on their education spending as they access incremental resources for the sector through debt relief.

Education systems commonly function with a high degree of centralization, weak incentives for efficiency, and low accountability for student learning outcomes. Many countries are pursuing systemic reforms in governance (for example, involving parents and communities in school-based management), financing (for example, using transparent formulas to make per-student funding more equitable), and management (for example, introducing direct measurement of student learning outcomes and other measures of school performance) to tighten system accountability.

Finally, research clearly demonstrates that nonformal education services, such as community-based early child development (ECD) programs, literacy and basic education programs for out-of-school youths and adults, as well as health and nutrition interventions aimed at school-aged children, have very strong complementary impacts on outcomes in the formal education system.

Overall government policies. Policies that affect macroeconomic conditions and the labor market and the nature of governance in a country obviously shape education sector performance. The demand for education and the productivity of national education investments are strongly affected by conditions in the labor market, which in turn reflect macroeconomic policy stability and the rate and nature of economic growth. Trade policies, the climate for foreign direct investment, and policies in other productive sectors cumulatively determine whether or not a country's growth path is labor-intensive and innovative, and this issue strongly affects the demand for education and for the different disciplines and career streams in the system. In sum, achieving education goals for the poor depends to an important degree on actions and policies outside the education sector.

Figure 19.1 implies three different levels of intervention and, hence, three different audiences for this analysis. For core central ministries (column D), the major issues will be overall economic policies, the share of overall expenditures allocated to education, and possible reallocations to reach the poor better. At the education system level (column C), the challenge is making the system—including public and private providers—function better for the poor through better policies, incentives, and management. And for those engaged in delivering community-level programs (column B), above all, in the area of adult literacy, the need typically is for better information about the costs and impacts of interventions and for

better coordination with those working at the system and macroeconomic levels. Reaching the poor typically requires reforms and new efforts at all three levels.

19.3 Diagnosing Education Sector Performance

Formulating an effective strategy for the education sector begins with analyzing education outcomes, education system performance, and the factors that influence those outcomes. This section outlines a diagnostic process with three steps:

1. benchmark education outcomes;
2. analyze public and private expenditures; and
3. probe the underlying causes of unsatisfactory performance using decision-tree analysis.

This diagnosis should identify the policy levers that have the greatest potential impact on educational outcomes within a given country context, which will be some combination of policies and programs that operate on broad socioeconomic factors, actions in related sectors, or reforms in the education sector.

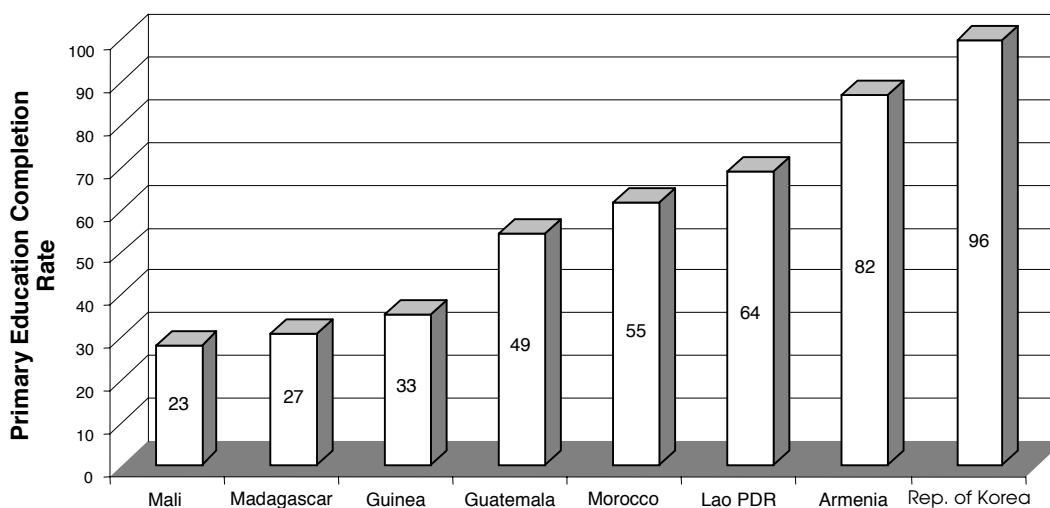
19.3.1 Key education outcomes

Low-income countries are typically characterized by the low percentage of children who attend and complete primary education (see figure 19.2), sharp gender disparities in education enrollments (figure 19.3), and the low percentage of adults who are literate (figure 19.4). Progress in each of these areas is powerfully linked to poverty reduction (see above).

A fourth crucial outcome to monitor is the ultimate goal of an education system: student learning. Although student learning is only beginning to be assessed across countries in internationally comparable ways, the recent TIMSS (Third International Mathematics and Science Study) and other international studies suggest that student learning is relatively low in low-income countries (see figure 19.5).

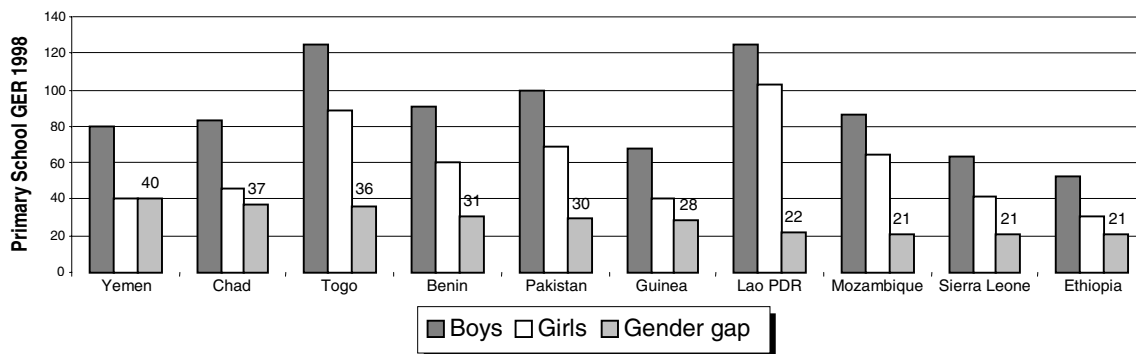
Tracking these four outcomes is not easy. The following sections analyze the issues involved in measuring these outcomes directly, and suggest proxy indicators that can be used in the absence of direct measures. As some of these measures are slow to change in response to new policies and investments, countries should also monitor a range of intermediate indicators that can reveal the direction in which the outcomes are moving.

**Figure 19.2. Primary Completion Rate in Selected Countries
(Percentage of all children that complete primary schooling)**



Note: The official duration of primary education in Armenia is four years; in Madagascar and Lao PDR, it is five years; in the other countries presented, it is six years.

Source: World Bank (2002a).

Figure 19.3. Gender Gap in Primary School Enrollments in Selected Countries

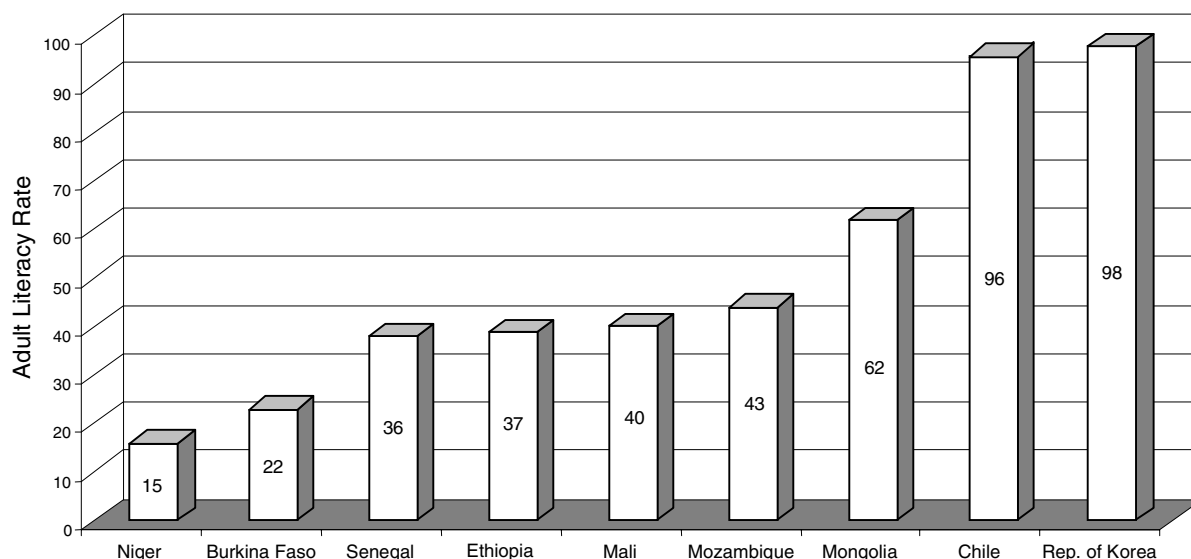
Source: UNESCO Institute for Statistics (2000).

Primary education completion rate

The goal of countries committed to Education for All (EFA) is that every child in every society should have the opportunity to complete a primary education of adequate quality. This implies a minimum of five years of primary schooling, during which time a child can acquire a sustainable degree of basic literacy and numeracy skills. As countries develop, the length of compulsory education is typically increased to seven or eight years and is often referred to as “basic education,” encompassing both primary and lower secondary education. As the length of compulsory education increases, more sophisticated goals are also added, such as the development of critical thinking skills and “learning how to learn.” For most PRSP countries the formal duration of the primary cycle is six years (see technical note P.1).

The assumption here is that countries will first concentrate on achieving the goal of universal primary education completion (the length of the cycle differs among countries), and then extend the goal to include lower secondary education completion.

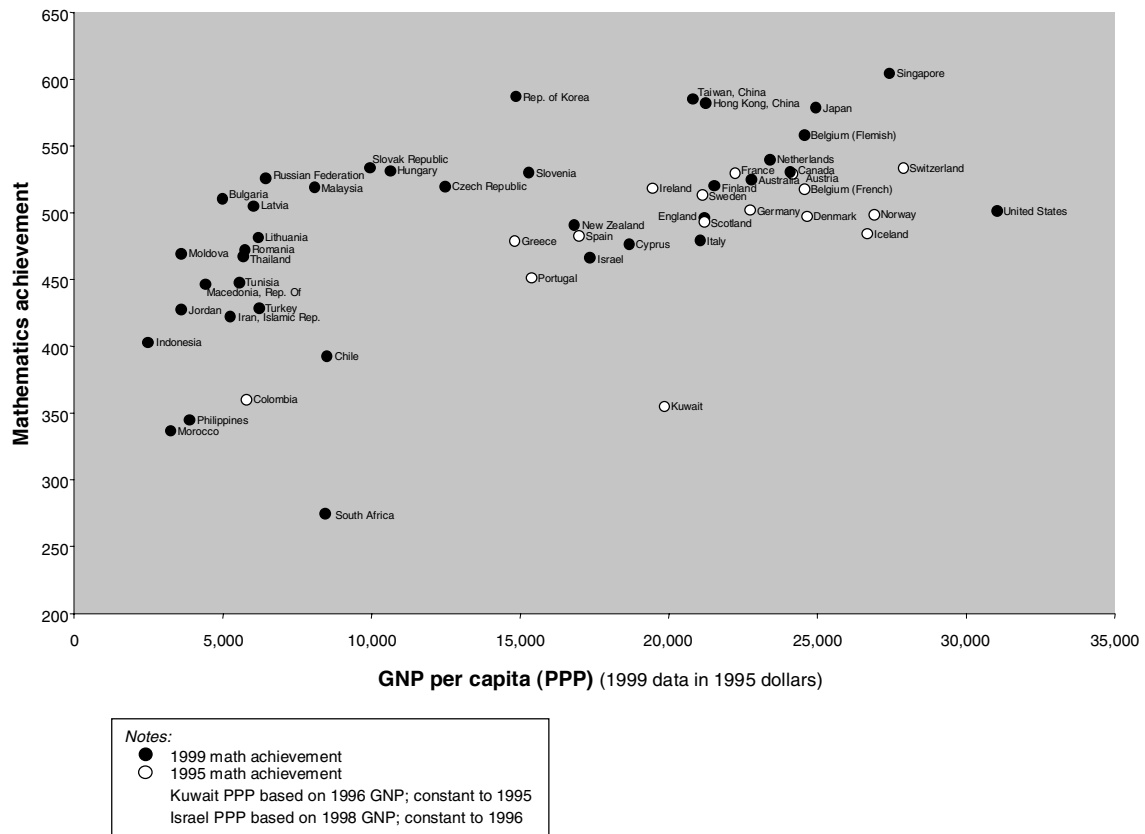
To track progress, countries need to know what percentage of all children complete primary education. Because the length of the primary cycle differs, UNESCO tracks for all countries the percentage of students who complete five years of basic education. This indicator can be misleading, however, as it does not include children not in school—which can be a large proportion of children in low-income countries.

Figure 19.4. Adult Literacy Rate in Selected Countries (percentage)

Source: World Bank (2002b).

Figure 19.5. Student Learning Achievement in Mathematics

Eighth-grade mathematics achievement from the TIMSS 1995 and 1999 assessment



Source: International Association for the Evaluation of Educational Achievement (2000).

Tracking primary education completion is further complicated by the large share of children who repeat grades, drop out of school before completion, and move in and out of different schools, including nonformal schools that often are not captured in official enrollments. Some students enter primary school before the typical official entry age of six, and many do so later. The pool of children graduating from basic education in any given year typically spans a large range of ages.

The *primary completion rate* may be calculated as the total number of students completing or graduating from the final year of basic education, divided by the total number of children in the population whose age is equal to the official graduation age. This measure is not perfect, as the numerator will include underaged and overaged (late entry and repeater) students, but it has several advantages: it is the standard OECD methodology for calculating cycle completion; it is easily calculated from ministry of education and population data that are available in virtually all countries; over time, the numbers of over- and underaged students will cancel out (and eventually they will also decline), so genuine progress in increasing coverage can be gauged; and finally, it is a direct measure of progress toward the goal of universal primary education completion. As such, it may be used to set meaningful targets: as a country's primary completion rate approaches 100 percent, progress is indisputable.

For these reasons, the primary completion rate as calculated above is preferable for policy purposes to widely used primary gross enrollment rates, which can show increases if the efficiency of the system worsens, for example, and student repetition rises, and which provide no indication of the percentage of students actually completing primary education. Technical note P.1 provides more detail on data sources and on the methodology for calculating the primary completion measure. It is important to note, however, that in many African countries "graduation" from primary education is not clearly delineated in education statistics. A significant number of African students who complete the primary cycle but do not gain access to secondary schooling because of scarce places choose to repeat the final year of primary

schooling to try to improve their test scores on secondary school entrance exams. In countries where primary graduation is not reported, the best alternative measure is a *proxy primary completion rate* defined as the total number of students enrolled in the final grade of primary school, minus the number of students that repeat the grade in a typical year, divided by the total number of children of official graduation age in the population.

In addition to measuring progress in expanding coverage, countries need to track the efficiency of their education system in producing basic education graduates. The costs to society of 100 percent of children completing five years of schooling with no repetition are much lower, for example, than the costs to society of all children completing five years of schooling with, on average, three years of repetition. In a country with 1 million students in basic education at a unit cost of \$50 per year, under the high repetition scenario the country would need to spend \$150 million (or 60 percent) more to achieve the same education outcome. It is important, therefore, to track children’s entry and progress through the primary cycle. Technical note P.1 discusses how to estimate the years of schooling input per graduate, cohort completion rates, and other measures of the efficiency of student flows.

A key part of PRSP preparation is to analyze variations in the primary completion rate for disadvantaged groups. Relevant disaggregations include by gender, income decile or quintile, urban/rural, or by region, ethnic group (if applicable), and/or specific vulnerability (orphan status, disability, and so forth), if available.

From a poverty reduction standpoint, reducing disparities in primary completion associated with gender, poverty, or ethnicity is as important as advancing the overall completion rate. In general, ministry of education statistics will include gender and region, but household survey data will be needed in order to analyze disparities by income decile or ethnicity. Technical note P.2 has a sample template for disaggregating data on primary education completion that can be easily adapted to other indicators.

Achieving universal primary education completion is a key long-term goal for any low-income country. However, policy actions can take several years to produce movement in the national completion rate. In a HIPC context, especially, countries need to monitor intermediate or “leading” indicators such as the following, which can give more timely insight into the impact of policy changes:

- primary intake ratio or entry rate to grade one;
- number of children out of school;
- gross enrollment ratio in each grade, especially in the final primary grade;
- net enrollment ratio in each grade, especially in the final primary grade;
- grade-by-grade enrollment profile;
- survival rate to grade five;
- repetition rates, by grade;
- dropout rates, by grade;
- teacher–student ratio; and
- pupils per classroom ratio.

While the most important intermediate indicator is the intake rate into grade one, it is also important to monitor repetition and dropout rates. Strategies that result in more girls being enrolled in grade one, in lower repetition, or in lower dropout can be expected to produce improvements in the primary completion rate over time. Monitoring these intermediate indicators is thus essential for understanding policy impact.

Gender disparity in education enrollments

In some 40 low-income countries, primary and secondary enrollment and completion rates for girls are sharply lower than for boys. Figure 19.3 shows how large the disparity can be. Where significant gender gaps exist, it is appropriate to set specific targets for increasing the participation and completion rates for girls. Countries such as India, China, and Bangladesh have set explicit and highly visible targets for closing the gap between girls’ and boys’ enrollments over the past decade and have made impressive

progress (see also section 3.1.3). Appropriate measures to track include the primary completion rate for girls, the ratio of girls to boys in primary school, and the number of girls out of school. As noted above, the primary intake ratio for girls is a crucial intermediate indicator.

Adult literacy rate

The prevalence of adult illiteracy in a country is typically a strong correlate of poverty. While extending school access to all children is a crucial goal, low-income countries cannot afford to wait the generation it takes for the full impact of these reforms on income and poverty. The success of countries such as the Republic of Korea and China in rapidly reducing poverty suggests that complementing the expansion of the formal system of basic education for children with cost-effective nonformal basic education and literacy programs aimed at adults and out-of-school youths is important.

Diagnosis is complicated by the weakness of adult literacy measures. Data are almost entirely based on national censuses, which often use proxy measures, such as the highest level of schooling reached, or simple questions of self-assessment. A number of international efforts, notably the International Adult Literacy Survey (IALS) and the International Adult Literacy and Lifeskills Survey (IALL) seek to refine and standardize methodologies and to incorporate a broader assessment of adult basic learning competencies (BLCs) or life skills.

Household surveys such as the Living Standards Measurement Survey (LSMS), which incorporate direct assessment of each respondent's ability to read and write and questions about the highest level of education completed, are a relatively robust data source for estimating adult illiteracy. As with primary completion rates, it is important to break down adult literacy indicators by gender, household income, and other population characteristics, as suggested in the section above headed "Primary education completion rate."

While the adult literacy rate is the key outcome, here again intermediate indicators are needed, such as the following:

- annual number of adults and youths (over age 15) who complete literacy training courses;
- annual number of adults and youths participating in nonformal education programs; and
- passing rate from adult basic education courses.

Even these data are not readily available in many countries, given the large number of nongovernment providers of literacy training; the wide variety of training sites, content, and modalities; and, commonly, the absence of an official body responsible for monitoring and evaluating the coverage or effectiveness of adult and youth literacy training programs. Improving the measurement of indicators of adult literacy should be a priority for countries pursuing poverty reduction strategies.

Student learning outcomes

Developing countries are increasingly recognizing the value of standardized assessments of student learning as a means of measuring how well students are learning over time, across different schools and across different regions, and of making comparisons with other countries. Box 19.1 lists a range of sources of data to assess student learning.

Standardized testing tends to be controversial, because no test instrument is values neutral. Poorly designed tests can create pressures for rote learning, for example, and attaching excessive importance to student or school performance can create overwhelming pressures for cheating. Developing country

Box 19.1. Indicators of Student Learning Outcomes

- **School leaving examinations**
- **Sample-based student learning assessments**
- **Participation in regional (sample-based) assessments**
- **Census-based national standardized student assessments**
- **TIMSS, IEA, and other internationally benchmarked student assessments**

participation in the major international assessments of literacy (IEA) and math and science skills (TIMSS) is still rare, although countries in Latin America and Africa have participated in several regional assessments.¹ New initiatives such as the Program for International Student Assessment (PISA) and the Progress in Reading Literacy Study (PIRLS) may, however, increase the number of countries for which comparable international data are available.

Participating in relatively expensive international assessments is not the only way to measure student learning outcomes. Countries can start with much simpler sample-based national learning assessments, focused on measuring basic literacy and numeracy skills in one or two grades at the end of a cycle (often the fourth and eighth grades). When such assessments include basic data on school and student characteristics collected at the school level, it becomes possible to track student learning performance across different regions and/or income groups and across different kinds of schools (for example, public or private), and to analyze the determinants of student learning.

Countries such as Chile, Brazil, and Uruguay are finding such national student assessment data valuable for the diagnosis of education sector performance and policy formulation. Where available, data on the learning progress of different at-risk populations should be disaggregated, as in the section above headed “Primary education completion rate.”

If a national assessment does not exist, or until one can be developed, it is important to analyze other available measures, such as primary school-leaving examinations or secondary school entrance examinations. While exams have the disadvantage of coming late in the school cycle, by which time many children—especially the poorest—have already dropped out, it is important for education policy that disparities in the examination performance of children from different regions and income groups be identified. Using readily available examination results is a low-cost way to gauge this.

19.3.2 Analyzing expenditures

Comparing raw education outcomes across countries is not very meaningful if countries are investing very different levels of resources in education. The next step, therefore, is to analyze public and private expenditures on education. This permits countries to compare their education outcomes per unit of expenditure and therefore to benchmark the efficiency of their education sector performance.

Complementing this, analysis of expenditures across different types of inputs, such as teacher salaries, books, or school construction, can provide insight into the quality of spending. Finally—and crucially for poverty reduction strategies—disaggregating education spending and outcomes by region, gender, income decile, and ethnic group permits analysis of system equity.

The rationale for public finance of education

The high private rates of return to education investments at all levels justify large investments by individuals and families. Notwithstanding these high private returns, there is also a case for public intervention, especially for basic education, for reasons of income distribution (more equal distribution of education is a powerful agent for income equality), capital market imperfections (which make it hard to borrow for education, especially at the lower levels of schooling, despite the high returns), and externalities (that is, benefits that accrue not only to the direct recipient of schooling but also to society at large).

Education externalities take several forms. First, researchers have found microeconomic evidence of spillover effects on productivity from education investments. For example, a study in Sub-Saharan Africa found an additional year of schooling for some farmers to be associated with higher crop yields not only for them, but also for their less educated neighbors (Appleton 2000). Similarly, findings from the Green Revolution in India suggest that the demonstration effect of farmers with more education adopting new, high-yield seeds led less-educated farmers to switch as well, resulting in a faster reduction in poverty for educated and uneducated farmers alike (Foster and Rosenzweig 1995a and b).

Other documented education externalities are intergenerational: a woman’s additional schooling, for example, can produce benefits that are captured in part by her future offspring, in terms of their better health and higher schooling attainment. Benefits from education that are hypothesized but not yet well

documented may also accrue at the national level; it is believed, for example, that education promotes better governance and improves innovation and the diffusion of technology.

All of these externalities appear to be highest for basic education: in other words, the wedge between the payoff captured by an individual investing in schooling and the benefits from the same investment that accrue to neighbors, offspring, or society at large appears largest for basic education and smallest for higher education. The rationale for public financing of education is that because of this wedge, private investment alone will be suboptimal. Nonetheless, relatively little is known about the size of this wedge in different countries, for different levels of the education system, and at different points in time. There is a need for further research on these issues to guide public expenditure policy in education.

System efficiency

Externalities provide an economic justification for public intervention in the market for education, especially at the basic education level. There are other justifications, such as the development of political and social cohesion through public education. Governments are in fact the major funder and provider of education in most countries—even though the economic case for public finance of education does not necessarily mean it should be publicly provided.

Public spending on education ranges from as little as 1 percent to as much as 10 percent of gross domestic product, and from 10 percent to 40 percent of total government spending.² While international comparisons show that aggregate expenditure on education nearly always increases with GDP and education outcomes broadly improve with education expenditures, these correlations are sometimes loose. Wide variations exist in education outcomes and spending efficiency across countries with similar income and/or education spending levels, as figure 19.6 shows. Mali and Sri Lanka both spend between 2 and 3 percent of GDP on education, but in the one country the student population completes less than 2 years of schooling, while in the other, more than 11 years. Analyzing such performance differentials can help identify the policies that produce the best educational outcomes per unit of expenditure.

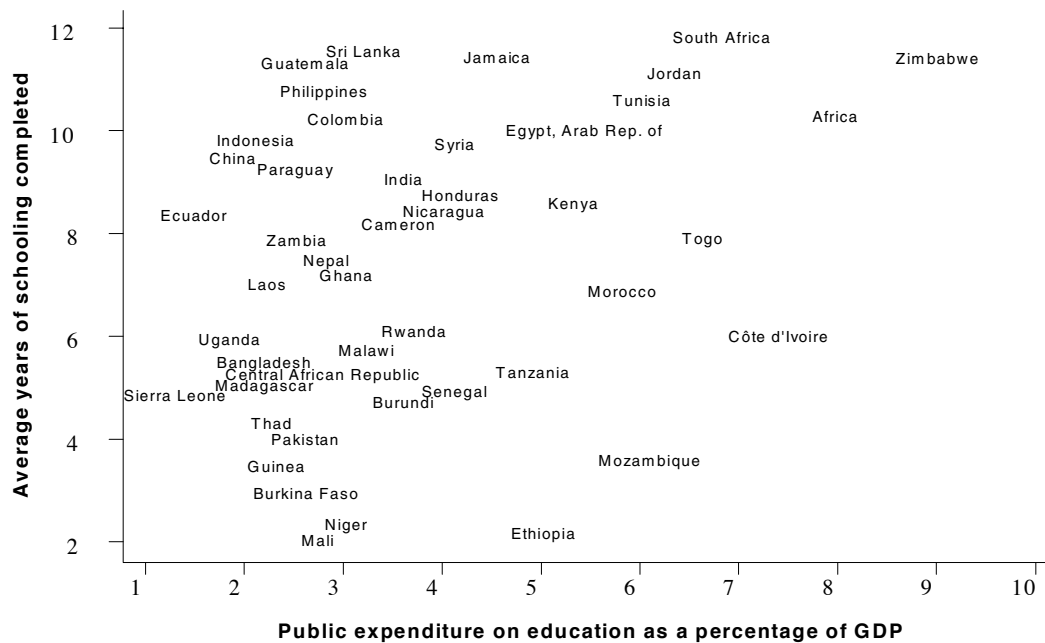
The first step is to analyze expenditures by level of education. Table 19.1 presents a typical format. Cross-country comparisons of expenditure shares across levels, unit costs, and costs per graduate can provide a useful picture of the relative emphasis placed on primary versus secondary and university education and the relative efficiency of these segments of the education system, compared with other countries. The most helpful benchmarks usually are data from other countries at a similar level of GDP, and especially those known to have well-performing education systems.

Such cross-country comparisons can help countries address three questions:

- Should aggregate spending on education be increased (that is, is overall education spending relative to GDP lower than in comparable countries)?
- Is there scope for improving allocative efficiency by shifting public funding across levels of education—for example, from higher education, where the “wedge” between public and private benefits is smallest to basic education, where it is largest?
- Is internal efficiency low—for example, are aggregate spending and allocations across levels broadly parallel with other countries but results within levels, such as costs per graduate, worse—calling for policies to improve the effectiveness with which resources are used?

Private provision and financing. One reason why countries with similar levels of public education spending may obtain different overall education outcomes is the differing extent of private provision and financing. Even when governments provide public education free of charge, private provision invariably still exists and can be of significant proportions. Private providers can be for-profit schools or schools administered by NGOs or religious providers, and it is important for policy purposes to distinguish between them. Private enrollments can reflect shortfalls in public school spaces or parents’ preferences for a different type of education, for religious reasons, peer effects, or for perceptions of school security or quality, for example. In a few low-income countries, very large private sectors (often largely nonprofit) have developed to accommodate the demand for education when public provision has broken down after

Figure 19.6. Public Expenditures on Education versus Average Years of Schooling Completed



Source: Mingat and Suchaut (2000).

civil conflict. For example, private sector enrollments at the primary education level have reached 89 percent in Swaziland (1996), 80 percent in Haiti (1997), and 57 percent in Uganda (1995). In all countries, the share of private provision is usually larger at the secondary and tertiary levels of education.

Private financing can also be significant. Private financing takes a wide range of forms, from informal parent contributions to public schools to full tuition payment by households for privately provided education. In between lie myriad arrangements for some degree of public subsidy to private providers, whether NGO or religious, as in many Latin American countries, or for-profit schools, as under Chile's voucher system. The rationale for such arrangements is the higher efficiency private providers often demonstrate per unit of public subsidy. Whether or not private providers produce higher learning outcomes per unit of expenditure, after controlling for differences in student background factors, however, is still a matter of active research and debate.

The World Bank, UNESCO, and others recommend strongly against charging tuition fees for public basic education, but the severe shortage of public resources in some countries creates strong pressures for family contributions, whether official (fees or purchase of school supplies) or unofficial (cash payments to teachers or in-kind support, such as housing). When evaluating the characteristics of the education sector in a PRSP context, it is important not to neglect the private sector. It is also important to differentiate between the types of private providers operating and the different forms of private financing, as these can raise very different policy issues, especially for the poor.

The following types of information are useful for analyzing the scope and nature of the private education sector. In general, all statistics should be broken down by type of provider (for-profit or non-profit/religious):

- Number of private school students and their socioeconomic background
- Private sector market share by level of education
- Number and types of private institution, by level of education
- Average teacher qualifications and salaries in public versus private schools
- Average student learning outcomes in public versus private schools (controlling for student background), if available.

Table 19.1. Public Expenditures on Education

	<i>Vietnam (1998)</i>	<i>Mozambique (1998)</i>	<i>Madagascar (1999)</i>
Aggregate spending^a			
At current prices (US\$'000s)	951,446	87,595	98,493
Share of GDP (%)	3.5	2.2	2.8
Share of total govt.spending (%)	17.4	10.17	17.8
Spending by level (current prices) (US\$'000s)			
Basic education	346,326	36,730	34,990
Secondary education	246,425	17,108	18,961
Vocational	63,747	4,293	2,885
Tertiary education	123,688	13,674	11,027
Other	171,260	7,037	401
Capital spending		6,535	22,616
Spending by level (% share)			
Primary education	36.4	46.6	51.3
Secondary education	25.9	21.7	27.8
Vocational	6.7	5.5	4.2
Tertiary education	13.0	17.3	16.1
Other	18.0	8.9	0.6
Unit costs per year^b			
Spending per primary student	34	20	24
Spending per secondary student	38	74	106
Spending per vocational student	239	159	
Spending per tertiary student	191	1,640	397
Internal efficiency (US\$)			
Spending per primary graduate		171	324
Spending per secondary graduate		740	1,003
Average expenditure per pupil in relation to per capita GDP			
In primary	0.10	0.08	0.11
In secondary	0.12	0.30	0.47
In vocational	0.74	0.64	
In tertiary	0.59	6.59	1.68

a. Based on recurrent and capital spending for Vietnam; based on recurrent spending only for Mozambique and Madagascar. Not including external expenditure on education.

b. Based on total students enrolled in the public education sector (US\$).

Source: World Bank (2000a, 2000b, and 2001).

System quality

The allocation of resources across different functional areas is important, as it affects the quality and performance of the education sector. A key concern is often relatively limited allocations for nonsalary current needs.

In most countries, the bulk of expenditure on education goes to buying the basic inputs of the education process: the time of teachers and other staff, equipment, and materials. There is typically a bias toward expenditures on teachers (salary inputs) rather than nonsalary inputs, such as books and learning materials that at the margin contribute more to student attainment and learning. Further breakdown often reveals relatively heavy expenditures on salaries of nonteaching (administrative) staff relative to teaching staff.

Analysis of the breakdown of recurrent spending by function can provide useful insights, particularly when compared with data from other countries (see table 19.2). Education expenditure analyses often also show a bias toward capital spending (new school construction) rather than toward recurrent maintenance spending to preserve existing infrastructure. It is important, especially in HIPC countries

where significant amounts of new funding are becoming available for the education sector, to ensure that funds used for new construction do not generate recurrent (maintenance) costs that may be under-budgeted in the future.

System equity

Education systems typically function with large variance in the distribution of resources across different levels of the system, across different regions, and across different schools. Analyzing the impact of these spending patterns on disadvantaged groups is crucial for poverty reduction strategies. If LSMS or other household survey data are available, benefit–incidence techniques can show which income groups benefit most from government spending. The three major steps in the calculation are as follows (see also chapter 6, “Public Spending”):

- rank the population sample by household income;
- divide the sample into quintiles or deciles; and
- calculate the expenditure shares going to each quintile (decile) for each educational level.

Table 19.3 shows that in many (but not all) developing countries for which data are available, the lowest quintile receives the smallest share of government expenditure.

A key factor underlying the observed disparities is that where universal basic education has not yet been achieved, students reaching secondary and tertiary education tend to be from upper-income groups. The poor, ethnic minorities, girls, and children with disabilities typically reach these levels of the system in very small numbers. The relatively high subsidy per student in publicly funded schools at the secondary and tertiary levels therefore has a regressive impact.

The distributive pattern of private expenditure. If private education provision or household spending on education is significant in a country, it is also important to determine the distributive pattern of

Table 19.2. Public Recurrent Spending by Level of Education and Function: Madagascar, 1998 (figures expressed as percentage of total)

	Primary	Secondary		Teacher training	Vocational/professional	Tertiary
		1st cycle	2nd cycle			
Wages and salaries						
System administration	12.56	12.14	10.82	4.87	10.39	1.70
School administration and support ^a	0.04	1.88	21.69	15.85	22.37	28.22
Teaching staff	58.63	52.56	52.26	10.77	33.89	28.53
Other	0	0	0	0	0	3.48
<i>Subtotal</i>	<i>75.58</i>	<i>83.50</i>	<i>84.78</i>	<i>31.55</i>	<i>66.65</i>	<i>61.93</i>
Other recurrent spending						
System administration	11.60	11.22	10.00	4.51	20.12	5.21
Functioning of public schools ^b	10.62	3.47	4.13	63.66	9.97	15.14
Support to students	0	0.58	0.46	0.28	0.52	12.89
Private school subsidies	1.03	0.78	0.42	0	0	0
Grants to national organizations	1.17	0.44	0.22	0	0	0
Other transfers	0	0	0	0	2.74	4.83
<i>Subtotal</i>	<i>24.42</i>	<i>16.50</i>	<i>15.22</i>	<i>68.45</i>	<i>33.35</i>	<i>38.07</i>
Total recurrent spending	100.00	100.00	100.00	100.00	100.00	100.00
% of total recurrent spending for the subsector	51	19	9	1	4	16
% of students enrolled in the subsector	82	12	3	0.1	2	1

a Wages and salaries for administrative and pedagogical support staff assigned to public schools.

b Materials and supplies for public school and other recurrent spending.

Source: World Bank (2001).

private expenditures. Are poor families paying more for their schooling, in absolute or relative terms? What does private spending on education buy? Are households paying for private schooling, and if so, at which levels of education? Are they financing illegal items; for example, payments for access to public institutions that are officially free of charge, as reported in many parts of the former Soviet Union? Are significant expenditures made on complementary goods such as uniforms, transportation, and private tutoring? Household survey data can often help identify where private resources are being spent, and by whom.

Allocation by region, district, and school. Some of the most important insights for education policy and poverty reduction strategies will come from analysis of anomalies in the distribution of education resources across different regions of a country or to different schools within those regions. Comparison of the public resources available to schools in different regions can be made through a simple cross-tabulation by region of total funding per child in each grade. Analyzing the allocation of resources across schools is often more difficult, as school-level budget data do not exist in many centralized systems, but is crucial. Approximations may be made by analyzing the distribution of teachers across schools, and these may be revealing: in one African country, the number of teachers allocated to schools with equivalent student enrollments was found to range from one teacher to 10. Such inequities in resource allocation can have profound effects on school quality and education outcomes.

An examination of public spending patterns in education is fundamental to helping policymakers decide whether to focus on (1) mobilizing more funding, (2) reallocating existing funding (across education levels, types of expenditure, and beneficiary groups or between public and private providers), (3) increasing the efficiency of existing funding within current allocations, or (4) a combination of these. The analysis of spending patterns sets the stage for the evaluation and selection of the policies most appropriate in the given context.

19.3.3 Identifying causal factors: the decision-tree approach

Public and private expenditure analysis of how much a country invests in education in aggregate, how the money is spent, and who benefits is important, but often falls short of producing a detailed understanding of the key constraints to better performance in a given education system. A third diagnostic step is to work back from the observed outcomes through a decision tree, with the aim of identifying more precisely the causal factors behind education outcomes and their variation across individuals, income, gender and ethnic groups, and regions within a country. Decision-tree analysis is particularly helpful in disentangling the socioeconomic or demand-side factors that influence education outcomes (including individual, household, and community-level factors) from the policy and institutional characteristics of the education sector itself.

Table 19.3. Distribution of Government Education Expenditure

Country	Year	Percentage Share of Public Expenditure by Income Quintile					% difference between 5th and 1st quintiles
		1st Quintile	2nd Quintile	3rd Quintile	4th Quintile	5th Quintile	
Côte d'Ivoire	1995	14	17	17	17	35	150
Guyana	1993	15	16	16	21	32	113
Madagascar	1993/94	8	15	14	21	41	413
Nepal	1996	11	12	14	18	46	318
Nicaragua	1993	9	12	16	24	40	344
Panama	1997	20	19	20	24	18	-10
Romania	1994	22	21	21	20	17	-23
South Africa	1993	21	19	17	20	23	10
Tanzania	1993	13	16	16	16	38	192
Vietnam	1992/93	12	16	17	19	35	192

Source: Guo, Steele, and Glewwe (1999).

Public expenditure analysis follows the funding from the top of an education system—the central government budget—to the bottom, to schools and individual student beneficiaries. Such analysis can expose many of the issues affecting the allocation and/or efficient use of resources, but more precise understanding is possible if this top-down analysis is complemented and cross-checked with an analysis of the education system made from the bottom up. The education decision tree shown in figure 19.7 can help in this analysis. The following sections provide a brief overview of how to use the decision tree; a full, step-by-step guide is available in technical note P.3.

The decision tree starts at the top by asking if the percentage of the age group graduating from basic education is acceptable or too low. If the primary completion rate (or net enrollment rate in the final year of primary education) is low compared with other countries, the tree points to the need to identify whether the underlying reason for this is low intake into grade one, high dropout during the basic cycle, or, as in many countries, both. If low intake into grade one is a significant part of the problem, analyzing the composition of the excluded population, using the LSMS-type data discussed earlier, should be given first priority.

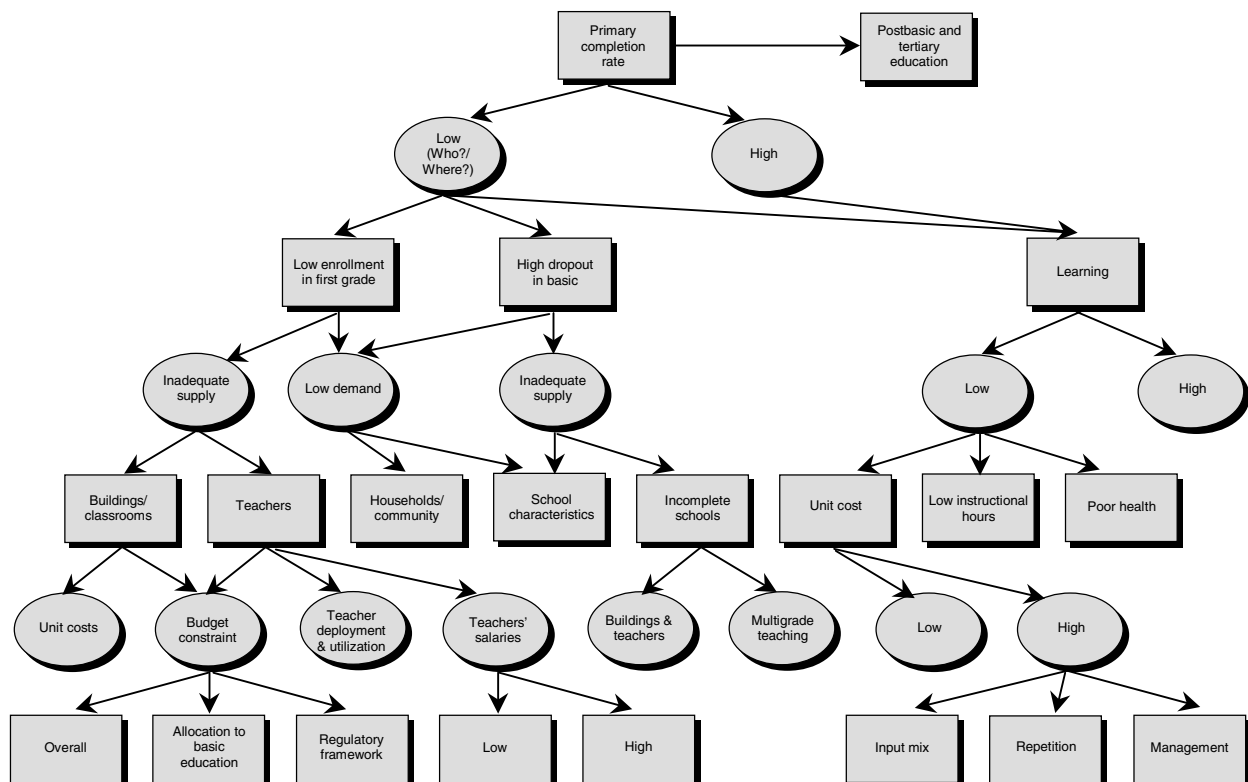
The next step is to establish whether the underlying reason for low enrollment in the first year of basic education is low demand for schooling or an inadequate supply of school places.

Analyzing supply constraints

If the basic issue is inadequate supply, the leftmost branch of the tree indicates the two major sources of supply constraints, that is, shortage of physical infrastructure (school buildings and classrooms) and/or shortage of teachers.

Shortage of schools and classrooms. The adequacy of school infrastructure can be examined by measuring the pupil-to-classroom ratio and the average distance from home to school. LSMS data often permit analysis of the proportion of the relevant age group (in different areas of the country) living, say, more than 3 kilometers from school.

Figure 19.7. Decision Tree for Analyzing Education Outcomes



If the problem is a shortage of schools and classrooms, the analysis moves to whether the underlying problem is that prevailing construction costs are too high, compared with unit construction costs in other sectors or with different school models. Very often pilot, NGO-supported, or social fund projects in the same country will be found to have much lower unit construction costs because of simpler or more innovative building standards, a greater reliance on local materials, or community involvement in construction.

If construction costs are reasonable, easing infrastructure supply constraints will require the mobilization of additional resources. In this case, the decision-tree analysis links back to the analysis of public and private expenditures and evaluation of government effort (the share of GDP devoted to education), foreign aid availability, private expenditures and their progressivity, and the share of the budget devoted to basic education in construction.

Shortage of teachers. In some countries, enrollments are less constrained by the number and distribution of schools than by an inadequate number and/or inefficient deployment of teachers in the system. A useful indicator is the national pupil-teacher ratio, found often in the EMIS (Education Management Information System) and/or the annual school survey.

It is relatively common to find teacher supply adequate overall, but with shortages in some regions and schools and an excess of teachers (resulting in very low pupil-teacher ratios) in other regions and schools. Many countries are unable to attract teachers, especially females, to work in remote rural areas. Another common problem is the assignment of large numbers of teachers to administrative work or other nonteaching positions. If the overall number of teachers is already inadequate, this will exacerbate shortages, particularly in the poor and rural areas that are typically the last regions to which basic education access is extended.

The inability of the education system to hire an adequate number of teachers is often linked to high average salaries for teachers, making it impossible to pay enough teachers from the budget to satisfy overall needs. This is particularly true in African countries. It is seldom easy to say whether teacher salaries in the public sector are too high, too low, or broadly appropriate, given market forces, but when salaries average 6 to 7 times per capita income, as in francophone African countries (compared with 2.5 times per capita income in Southeast Asian countries) there is clearly an issue (Mingat and Suchaut 2000). Criteria to guide this assessment are suggested in box 19.2.

Analyzing low demand

The central branch of the decision tree analyzes weak demand, which can also be an important factor limiting enrollments. A demand problem clearly exists when, despite the availability of well-distributed classrooms and schools, significant numbers of families do not enroll their children in school. Many factors affect household decisions on schooling, including the perceived returns to education in the labor market; cultural expectations; household income; direct costs of schooling, such as uniforms, books, transportation, and miscellaneous fees; indirect costs, such as forgone earnings; and, increasingly, HIV/AIDS and other catastrophic family health problems.

The direct costs of schooling are almost always higher for children with disabilities because of transportation issues and cultural taboos that sometimes preclude parents from “showing” disabled children outside the home. In some countries, however, disabled children are more likely than able-bodied children to be sent to school because the indirect costs of their schooling may be lower—for example, they may be unable to provide agricultural labor—and the expected benefits of their schooling, relative to limited alternatives, may be high. Enrollment patterns of children with disabilities must thus be analyzed in the country context.

Variations in demand for schooling can be substantial across ethnic groups, across socially and physically disadvantaged groups, and across provinces, districts, and communities, and especially by gender. Parents unable to afford the direct costs of keeping all of their children in school often choose to keep their daughters at home to perform household chores, or because of safety concerns, or because educating their sons is perceived to bring greater benefits to the immediate family than educating

Box 19.2. Criteria for Evaluating the Level of Teachers' Pay

- Are there many more individuals applying for teacher training and for work as teachers than there are places in teacher training colleges and established teacher positions?
- How does the average teacher salary compare with (1) per capita GDP; (2) average wages in other sectors of the economy for individuals with similar education, adjusted for hours worked; and (3) teacher salaries in other countries, as a share of per capita GDP?
- Do young teachers in the public sector earn a living wage, (that is, a salary that is clearly above the poverty level, or enough to support a family of four without the teacher having to take a second job)?
- Are teachers in the public and private sectors paid broadly similar salaries for the same hours?

daughters. Researchers analyzing household spending patterns on education in Vietnam concluded that “schooling of girls is treated as more of a luxury (less of a necessity) than schooling of boys” (Berhman 2000).

Research also indicates that important interactions exist between supply and demand, related to actual or perceived quality of the schooling available. Even where adequate school places exist, parents may choose not to enroll their children because the school lacks electricity or toilets, because of the behavior or perceived effectiveness of teachers, because of a lack of books and materials, because of the language of instruction used, or other reasons.

High dropout rates in basic education. Low primary completion may also indicate a high dropout rate. Students may drop out because of the fact or perception that the quality of teaching and learning at school is low or because there are more rewarding alternatives to schooling—in essence, they drop out when the direct and indirect costs of staying in school exceed the expected benefits. Dropout is highly correlated with repetition (discussed in the section 2.3.3), which shifts the cost–benefit ratio. Dropout can also stem from inappropriate teacher behavior. Social assessments can help in analyzing these factors. Key issues to investigate are the perceptions of parents and of the community of the relevance and accessibility of the curriculum (especially for children from poor families), the possibility of conflicts between the school calendar and needs for seasonal labor, the level of teacher qualifications, teacher behavior, and the availability of books and supplies.

High dropout rates in areas with incomplete schools are common in poor countries, especially in rural areas. The obvious remedy for fixing an incomplete school is to build more classrooms and recruit more teachers. This can be expensive, however, especially in areas of low population density. Countries seeking to improve the efficiency of their education spending need to consider broader options, including multigrade schools in which teachers teach more than one grade, double-shift schools, the provision of school transport, or distance learning. These options are discussed further in section 19.4.

Analyzing low learning achievement

The rightmost branch of the decision tree addresses student learning—the ultimate outcome of an education system. If national learning assessments of basic literacy and numeracy skills do not exist, the development and administration of well-designed but relatively simple and low-cost learning assessments that can be given on a regular cycle to a representative sample of students should be a priority.

If national assessments or national examination data are available and suggest that student learning, on average, is acceptable, it is still important to analyze the variance in student performance, especially as it relates to family income, gender, ethnicity, or disability.

Learning outcomes in most low-income countries, even in those in which nearly all children complete basic education, are often quite low, on average. The rightmost section of the decision tree focuses on why outcomes may be unsatisfactory and what can be done to improve learning.

Where there is low access and learning achievement is low (the worst-case scenario), there is a need to investigate both inputs and processes. Inputs that can contribute to low learning achievement include irrelevant, poorly articulated, overloaded curricula; inadequate teaching and learning materials; inadequate instructional time; and unsuitable learning environments. Associated processes include poor teaching quality; inadequate utilization and monitoring of the curriculum and poor use of instructional

materials; low teacher motivation; unsuitable language of instruction; inappropriate student assessment and examination processes; poor school management and instructional leadership; and home practices that are not supportive of effective schooling.

At this point the decision-tree analysis recalls the public expenditure analysis of the unit cost of basic education—the amount of public spending per pupil per year—which directly affects classroom-level conditions, including key factors such as class size, teacher qualifications, availability of learning materials, and so on. If the unit cost is low, it may be necessary to increase spending so that learning outcomes might be raised. Analysis will be required to determine the ideal mix of inputs and the best utilization of each of these inputs to improve learning outcomes.

Commonly, however, unit costs are high and yet learning outcomes and completion rates are low, indicating that the overriding problem is system inefficiency. The three main causes of low efficiency are: (1) an input mix that does not support learning, (2) high repetition rates, and (3) inefficient management. Analysis of the regional equity of spending is important: if unit costs are much lower in some schools or districts than in others and, in particular, if less is spent on children in poor communities (for example, because the least qualified and least experienced teachers end up teaching in poor communities, or because schools in poor areas tend to be inadequately equipped), actions to improve the equity of spending should be a priority.

As noted earlier, one cause of high unit costs and low learning outcomes is that the mix of inputs (or functional allocation of spending) is suboptimal and does not support learning—with too much spent on administration relative to teaching or too much on personnel in general (administrators and teachers), and too little on nonsalary pedagogical inputs such as textbooks and other instructional materials.

Another potential source of high unit costs combined with poor learning outcomes is poor management. It is important for an education system to focus on learning outcomes and to ensure that inputs and processes are directed to this end. Employing teachers but without ensuring that they show up for school, or failing to upgrade their skills as they continue in service, wastes a country's limited budget for teacher salaries. High spending on textbooks without making sure that these are distributed on a timely basis and used in classrooms as intended is also a waste of resources. In a typical education system, the best-performing schools produce five times better results (whether measured in terms of student learning or graduation rates) per unit of expenditure than the worst-performing schools in the same system.

Student factors. Poor health can be a major cause of low learning achievement. In many poor countries, and especially in the poorest regions of those countries, malnutrition and disease limit students' attendance and their capacity for learning. Where malnutrition is prevalent, many children are physically stunted (below normal height) by the time they enter school, and many of those who are malnourished and sick never attend school at all. Those who do enroll tend to be listless from hunger and weakened from frequent bouts with diarrhea and fever; their attendance and academic achievement obviously suffer. Children with physical or learning disabilities who are not given proper assistance also suffer. The potentially high benefits of investment in education are never realized in the case of these sick and malnourished children. Cost-effective actions that can be taken at the school level to address common health and nutritional problems have a high payoff in terms of student attendance in learning (see also section 19.4). Simple training to sensitize teachers and help them provide the extra assistance and encouragement that vulnerable children, such as orphans and children with disabilities, need can also be relatively low cost, but have a high return in terms of the academic progress of these children.

19.4 Reform Strategies and Priority Programs

Careful diagnosis pays off when it helps policymakers develop more successful reform strategies and more cost-effective and better-targeted programs. This section focuses on moving from diagnosis to policy and program design. It looks at the key policy levers available to ministries of education to improve outcomes for the poor in education before focusing on the challenge of eradicating adult illiteracy and on lessons from international experience with the design and delivery of cost-effective programs. It also considers the key policies in other sectors that have an important influence on education

outcomes of the poor, including macroeconomic and fiscal policies and the delivery of other social services, notably ECD interventions and health and nutrition programs.

19.4.1 Education policies to improve outcomes for the poor

Table 19.4 summarizes the three key education challenges that low-income countries commonly face in improving outcomes for the poor in basic education. The priority issues will vary from country to country, and the diagnostic process outlined in Section 19.3 is designed precisely to help countries analyze which factors are most urgent given their unique context. Virtually all countries, however, face some degree of challenge in all three areas:

- expanding the supply of schooling to ensure that all children have access to basic education;
- improving quality; and
- stimulating demand, especially to increase the participation of girls.

In each area, experience from around the world offers some guidance as to specific policy instruments and strategies that can help countries address these challenges most cost-effectively. The following three sections—“Expanding supply,” “Improving quality,” and “Stimulating demand and relieving household constraints”—focus on the basic education system, although some of the same issues and strategies are relevant for secondary education. Issues specific to secondary and tertiary education are considered under the fourth section, “Postbasic and tertiary education.”

Expanding supply

How to increase access to education is the most obvious challenge faced by HIPC and other low-income countries, in some of which as many as 50 percent of school-aged children still never enter a primary school. In many places, the magnitude of the challenge is such that even with significant additional external resources, the goal of universal primary access and completion cannot be reached without major changes in the way education services are designed and delivered. Some of the countries that have made the most progress toward EFA over the past decade—such as Bangladesh, China, Uganda, and Guinea—have developed new and substantially more cost-effective schooling models. The core elements of these models are:

- lower-cost standards for new schools and new teachers;
- more careful targeting of school expansion to communities lacking access;
- strategies to use existing school infrastructure more efficiently, such as double-shift schools in urban areas and multigrade schooling in rural areas;
- incentives for the expansion of quality private (for-profit and NGO) providers; and
- tighter system management to lower administrative overhead, reduce teacher absenteeism, and plan and budget more effectively.

Lower-cost expansion of basic education

Reducing construction costs. Pilot initiatives and social funds in many countries have documented the scope for lowering construction costs by as much as half through the use of more modest, but still safe and adequate, design standards; the use of lower-cost local construction materials; and through mobilizing community labor to help build schools. These directions are essential for EFA progress: donors should ensure that their procurement standards do not stand in the way of more practical, low-cost school construction.

Careful school mapping and expansion planning is also important: it is not uncommon for urban areas to have excess school capacity while remote rural areas lack schools. A new but important dimension is the need for school systems to plan for the impact of HIV/AIDS on student enrollments and teacher supply over the coming decade. A demographic model is available to assist in this.

Table 19.4. Key Education Policy Options

<i>Area of concern</i>	<i>Policy choices</i>	<i>Means</i>
Expand supply	Low-cost and carefully targeted expansion	<ul style="list-style-type: none"> • Lower-cost designs and construction material • Community-based construction • Fast-track preservice training (that is, shorter duration formal training, more hands-on training in classrooms, distance delivery) • Locally recruited teachers • Incentives for teacher deployment to remote and rural areas
	More cost-effective use of existing school infrastructure	<ul style="list-style-type: none"> • Double-shift schools • Multigrade schools • Teacher redeployment and efficient class size
	Greater private provision and financing of education	<ul style="list-style-type: none"> • Simple regulatory framework for private providers (that is, accreditation system and collection of basic statistics) • Grants to cost-effective nonpublic providers
	Tighter system management	<ul style="list-style-type: none"> • Planning for HIV/AIDS impact • School mapping (and later, more sophisticated EMIS) • Review role, selection, and training of school heads • Control of teacher absenteeism • Equitable funding across schools (per student allocations)
Improve quality	Quality teaching	<ul style="list-style-type: none"> • Emphasis on literacy and numeracy skills and clear learning goals for students • Student-centered interactive teaching methods • Ongoing professional development in content areas and pedagogical skills • Teacher networks and resource centers • Quality teacher manuals • Mother tongue instruction in initial years • Increased days of instruction
	Quality instructional material	<ul style="list-style-type: none"> • Local teaching materials • Timely and equitable distribution of low-cost learning materials (textbooks) to schools and to students • Curriculum revision to improve relevance • Distance education (for example, radio education)
	Tighter accountability mechanisms	<ul style="list-style-type: none"> • Simple school monitoring and reporting system (including private schools) • Assessment of student learning outcomes • Stakeholders empowered in school affairs
	Institutional strengthening	<ul style="list-style-type: none"> • Reinforced management functions (that is, planning, budgeting, staffing) • Greater school autonomy
Stimulate demand; relieve household constraints	Promote education of girls	<ul style="list-style-type: none"> • Targeted stipends for girls • Labor-saving technologies, water points, and childcare facilities at school to ease girls' household work • Site schools closer to communities and provide separate latrines for girls • Recruit more female teachers and administrators • Involve mothers in school committees
	Ensure school affordability	<ul style="list-style-type: none"> • Eliminate school fees • Provide textbooks and school supplies free to target groups • Offer stipends to poor households and AIDS orphans
	Make schooling attractive to parents and communities	<ul style="list-style-type: none"> • Involve parents in school councils with decision power • Make school calendar compatible with local economic activity • Improve school environment with latrines, water, electricity • School health and nutrition programs (FRESH) • ECD programs • Nonformal education programs for youths and adults • Community libraries (eventually Internet centers)

Paying attention to the needs of children with disabilities is also important. Sometimes simple changes to school building designs can ensure that schools are accessible to children with limited mobility. New information about the numbers of children with physical and learning disabilities in developing countries has revealed several troubling facts. First, as much as 5 percent of the school-aged population may suffer from disabilities, a larger share than previously suspected. Second, there is a high tendency for these children to be among the very poorest in society. Third, schooling participation of children with disabilities is among the lowest of any group. Growing evidence suggests that the most cost-effective approach is not to build special schools for children with disabilities; more promising are the innovative and relatively low-cost “inclusive education” approaches being adopted in China, Nepal, the Lao People’s Democratic Republic, and elsewhere to mainstream the participation of children with disabilities into the regular school system by reducing physical and other barriers to their participation (see section 3.1.3)

Teacher preparation and deployment. Many countries striving to expand access to basic education rapidly find that their traditional models of teacher preparation and standards (especially if the requirement is a tertiary education degree) make it impossible to groom teachers in adequate numbers. Complicating this is the loss of teachers to HIV/AIDS or through migration to more attractive employment that has become available as a result of AIDS mortality in other sectors. These factors are already straining the capacity of some African countries to produce adequate numbers of new teachers.

A second issue is the difficulty of attracting and deploying highly educated, usually urban teachers to the rural areas where school systems need most to expand. Third, the relatively high average salaries of teachers with higher-level degrees and full civil service status may make the costs of expanding the teaching force prohibitive. Given these contexts, it is crucial to develop strategies for lowering the costs of teacher preparation and/or for recruiting a new teacher cadre.

To speed up and lower the costs of teacher preparation, countries are developing “fast track” standards that combine shorter formal training with more emphasis on hands-on practice in classrooms, and are making greater use of distance education (radio/video or correspondence courses) for teacher trainees. Distance teacher training programs in China, Pakistan, Tanzania and elsewhere have lowered the costs of producing a graduate by 30 percent or more (Perraton and Potashnik 1997). Such programs could have significant potential for countries seeking more rapid training and certification of the teaching force.

Countries ranging from Senegal, Burkina Faso, and Benin to Mexico, Uruguay, and India have found that establishing a new teacher cadre is another important strategy, as this can not only allow faster teacher recruitment but can also enable easier deployment of teachers in rural areas and expanded local language instruction. Teachers within the new cadres are often recruited from the local community in rural areas and may possess only secondary-level education, but are offered special training and more flexible incentives than the traditional teaching force. Although these teachers are fully incorporated into the education system and receive in-service training, materials, school supervision, and other support, just like other teachers, they typically do not have civil service status, salaries, or benefits. In some cases their salary costs can be half those of regular teachers. Countries pursuing this route rarely face a shortage of candidates for these cadres, but the long-term political viability of this approach may raise issues (see Section 19.5.2).

Better use of existing infrastructure

Multigrade schooling. Reaching children in the remotest hamlets where population density is low and unit costs are correspondingly high is a challenge for all school systems. Colombia, Guatemala, Burkina Faso, Zambia, the Philippines, and other countries have found multigrade schooling (one teacher teaching several different grades in a single classroom) to be the most cost-effective way of making optimal use of classroom facilities and of providing complete primary schooling in sparsely populated areas. Multigrade teaching works best where teachers are trained to manage a classroom of children of different ages, where all students have self-paced learning materials appropriate for their grade, and where older students help tutor younger students. Research shows that student learning in such settings compares very favorably with learning outcomes in traditional classrooms.

Double-shift schools. Double-shifting addresses the problem of classroom shortages in densely populated areas. In urban areas, schools operating two shifts per day (sometimes with a third, evening, shift for older students) can achieve intensive and more efficient use of school infrastructure, freeing up resources for other priorities. Countries as wealthy as Singapore continue to use double-shifting throughout the primary system for cost-effectiveness reasons. Research indicates that double-shift schools can allow students adequate instructional time without impairing learning. However, care must be taken that vulnerable groups, such as girls, are not routinely assigned to the less desirable shifts.

Teacher redeployment and class size. Rationalizing the assignment of teachers across schools can improve system efficiency and often also equity, although it may be necessary to offer incentives such as housing or other allowances to attract teachers to less desirable areas. Class size is an important factor in education efficiency. The Republic of Korea and Singapore, for example, maintain an average class size of more than 40 in basic education; although this may seem high, it enables resources to be assigned to other inputs such as books, materials, and computers. Education research across a large range of countries supports the view of Korea and Singapore that this tradeoff is cost-effective; lowering average class size below 40 should not be a priority use of resources in low-income countries.

Expanding private provision

Making maximum use of the private sector is also important when trying to cost-effectively expand education coverage. Involving NGO or for-profit private providers in basic education can lead to better quality of education, by mobilizing available management capacity, providing more choice for families, and possibly increasing competition among providers. In Peru, for example, contracting with an NGO provider to administer public schools in remote rural areas resulted in better-functioning schools. Governments can increase schooling opportunities and quality by contracting out public schools, by providing scholarships to poor students to attend nongovernment schools, and by subsidizing the construction of nongovernment schools.

Improving quality

Education systems across the world, no matter how well resourced, are grappling with the challenge of how to improve quality. For countries trying to expand access at the same time, the challenge of improving quality is even greater. However, research shows unequivocally that expanding access without ensuring minimally adequate quality is a formula for low efficiency—children do not learn, grade repetition is high, and large numbers of students drop out before completing basic education. School quality is not a luxury that can be set aside until universal coverage has been achieved; development of the two must go hand in hand.

The key to improving overall quality is to find low-cost, but effective, strategies with respect to teaching quality, instructional materials, school and system accountability, and education administration.

Quality teaching

Research shows that the single most important determinant of school effectiveness is teacher quality. However, research also shows that teachers' formal qualifications are not well correlated with their effectiveness in the classroom, for two reasons: (1) teacher preservice training in many countries is of low quality and imparts only traditional, "frontal" teaching methods; and (2) classroom teachers enjoy a degree of isolation from scrutiny and performance feedback that leaves wide latitude for variations in behavior and motivation. Revitalizing teacher preservice training is important, in part to attract high-caliber individuals into the profession, but it takes time for its impact to be felt throughout the system. Many low-income countries urgently need to achieve an immediate improvement in teachers' skills and motivation.

Teacher networks and ongoing professional development. Where teachers' content mastery is relatively weak, a strong focus on the teaching of basic literacy and numeracy skills, with clear learning goals, is important. Teachers also need to be encouraged to develop more student-centered and interactive teaching styles and to break away from frontal lecture techniques. India has shown that, with proper

training, teachers can effectively use more interactive pedagogy even in classes of more than 50 children. Teachers also need training to help them deal sensitively with gender differences and with the special learning and emotional needs of children who have lost their parents to HIV/AIDS, suffer from disabilities, and so on.

Ongoing teacher development is the key to such improvements. Countries are beginning to implement relatively simple, low-cost strategies for teacher development that are having a direct impact on teachers' skills and the use of those skills. *Microcentros* in Chile and Colombia, for example, bring small groups of rural teachers together on a monthly basis to share lesson plans, assess student work, and help each other improve their teaching practice. India's DPEP (District Primary Education Program) network of teacher resource centers provides teachers with new learning materials, on-the-spot advice, and mentors who regularly go out to visit classrooms and reinforce new skills. Regular visits from district resource teachers are similarly helping teachers to improve their practice in Lesotho, Kenya, and Nepal. These approaches are having more impact than many more costly institute-based in-service training programs and traditional school inspectors.

Language of instruction. Another important factor in quality teaching is the language used for instruction. Research from around the world has demonstrated that children become literate more easily and more quickly when taught in their mother tongue or another familiar language. Low-cost but effective strategies developed in polylingual societies include using adults from the community as teachers, keeping literacy materials low-cost and simple and involving NGOs to develop materials in languages not yet written, and incorporating local content in the curriculum as much as possible. Studies show that children taught for the first two to three years in their mother tongue before transitioning to a language of wider communication have higher academic performance than peers of similar linguistic and socioeconomic background who have been taught only in the language of wider communication. The financial savings from lower repetition rates are often more than enough to cover the cost of introducing mother-tongue instruction in the early years of basic education.

Instructional time. Research has also established clear links between student learning and effective instructional time, or "time on task." But extending the school day is a costly option and likely to be prohibitive for many countries, especially where double-shifting is necessary to achieve universal coverage. More practical measures include ensuring that the official school calendar is effectively observed and training teachers in better management of available class hours. In countries where the official school calendar is far shorter than the OECD average of 1,000 hours per year, however, consideration should be given to extending the school year up to international norms.

Quality instructional materials

Research has demonstrated the cost-effective impact of an "enriched classroom environment" on student learning. However, the reality in many low-income countries is an absolute shortage of reading books, maps, manipulatives, and other materials, and textbooks that are out-of-date, irrelevant, gender-insensitive, and often available only in limited numbers. Equally critical are the many cases in which materials are not effectively used.

The quality of instructional materials is directly linked to the quality and relevance of the curriculum, and many countries need to revise curriculum standards. Until this is done, major investment in textbooks should be avoided—low-cost mimeographed worksheets, stories, and other materials may be substituted effectively. Alternative strategies that have been used with success in Colombia and India include giving small grants to teachers to develop their own teaching-learning materials and making instructional materials out of locally available resources.

Educational technology, while still limited in most low-income countries, has been demonstrated to increase student learning cost-effectively. While the media used most widely to date are radio and television, radically declining costs of Internet connectivity are revolutionizing the landscape of distance learning and information resources. It is difficult to predict the rate at which Internet connectivity will expand in HIPC and other low-income countries, but the potential for countries to leapfrog into on-line library systems and avoid costly investments in physical books and libraries is clearly there, with the

promise of a dramatic increase in the quantity and quality of learning resources available to schools and students.

Educational technology can enhance the quality of education both by increasing the availability of up-to-date teaching materials and by providing the most highly qualified teachers with the means of reaching a wider audience. It can be implemented through a variety of means, including radio, print, correspondence, satellite, or the Internet. Traditional distance education may be most appropriate at present for improving the access and quality of basic education in low-income countries, such as through radio instruction to remote rural communities, but in the future new technologies and on-line learning resources can be expected to transform the way education is conceived, delivered, and received.

Tighter accountability

Managing quality improvement requires meaningful measures of current performance, mechanisms for tracking progress over time, and rewards and sanctions for good and poor performers. Most education systems—even in industrial countries—lack these.

Country experience points to two tracks for strengthening accountability, one emanating from the top down and the other from the bottom up. The top-down strategy involves developing better systemwide information on the comparative performance of schools, districts, and provinces, and to use this both to reward good performance and to hold poor performers more accountable. This is principally accomplished by building a functioning education management information system (EMIS) and instituting standardized assessment of student learning outcomes. The bottom-up strategy is to create direct accountability pressures on schools from local stakeholders by drawing parents and communities into the oversight and management of schools.

An EMIS does not have to be sophisticated or expensive; it can start modestly. The key is the timely collection of school-level data and the development of appropriate comparison groups for schools and districts, based on student socioeconomic factors. If performance on enrollment measures such as the primary completion rate, dropout, and repetition rates is compared across schools with similar student populations, it is fair to hold poorly performing schools accountable and to expect them to develop improvement plans. All EMIS data should be gender-disaggregated.

Student learning is the most important outcome that education systems need to track. It is not simple to put in place a standardized system of student assessment, but it is a myth that such systems need to be extensive, elaborate, or prohibitively costly. Countries can start with small, sample-based assessments in two key learning areas, math and literacy, administered for only one or two grade levels and repeated only every two or three years, and can build up from there over time and as resources permit. Many countries have found that only after student learning began to be measured in a standardized way across the education system, with results on comparative performance fed back to schools, have schools and teachers truly focused on student learning outcomes and how to improve them.

Institutional strengthening

The institutional capacity for sound planning, budgeting, staffing, and performance management is at the core of a quality education system. Such capacity is essential for good policymaking and for eliminating corruption. For many countries, developing this institutional capacity will require restaffing the ministry of education with a smaller number of more technically trained and results-oriented staff, and reviewing the role, selection criteria, and preparation and development of school leaders. Research shows that school leaders can have a crucial impact on school performance: the payoffs for schools are particularly high when school heads maintain a strong focus on teaching and learning. The role of school inspectors should also be reviewed. Increasingly, school systems like the one in the state of Ceará in Brazil are shifting district offices from an inspection orientation to school support, staffing them with math and literacy specialist teachers and providing libraries and other resources.

Decentralization and school-based management. While there is little research evidence that education decentralization to lower levels of government (states, municipalities) or regional administrative branches is an effective strategy per se for improving education system performance, research does

suggest that decentralization to the school level can be important. Where schools remain dependent on distant central or regional offices for resources and decisions and feel no direct accountability for their own results, teacher absenteeism is often endemic, schools cannot undertake simple repairs, and they suffer long waits for basic inputs such as chalk or paper, all of which impair school quality.

To address these issues, countries such as El Salvador, Nicaragua, India, and many OECD countries have found that granting more autonomy to schools can tap latent institutional capacity and generate stronger incentives for school improvement. When offered the opportunity, school personnel, parents, and local community members will usually contribute actively to school affairs. Greater voice in school decisions from these stakeholders can make schools more responsive to local students' needs. If operating budgets are decentralized to the school level, resources may be used more efficiently. And if parents and community members are empowered through formal participation in school-level councils to oversee school performance, they can generate direct accountability pressures on school and district personnel. Researchers in Nicaragua have confirmed that "autonomous" schools in which parents have a majority voice on the school-level council have lower teacher absenteeism than traditional schools—an important contribution to school quality (King and Ozler 2000).

Stimulating demand and relieving household constraints

The third broad constraint to universal primary completion in low-income countries comprises the demand-side issues that cause a large number of students to drop out from or never enroll in school, even where places are available. Worldwide, two-thirds of the children out of school are girls; the rest are usually boys from the lowest income groups, orphans (increasingly from AIDS), and disabled students. For these children, the dominant constraints are parental and community attitudes that undervalue education, especially for girls, and household poverty that makes school attendance unaffordable. Special strategies for addressing these household factors—for example, public awareness campaigns that highlight the need for all children, including girls and children with disabilities, to participate in school—are essential. Schools may also need to take other steps to accommodate the needs and values of their communities in order to reduce student dropout, such as adapting the school calendar to the agricultural production calendar.

Promote the education of girls

In close to 40 low-income countries, basic education enrollment and completion rates for girls are sharply lower than for boys. There is no single strategy for getting more girls into school, but different combinations of the following approaches have shown results in countries ranging from China and India to Bolivia and Malawi.

Reducing the direct and opportunity costs of schooling for girls. Research shows that the direct costs of schooling pose more of a barrier for girls than for boys. Targeted interventions to reduce or eliminate direct costs, such as abolishing school fees and providing free textbooks and uniforms, have a demonstrated positive impact on parents' decisions to send daughters to schools and keep them there. Indirect or opportunity costs also importantly affect girls' educational opportunities; to offset these, countries such as Bangladesh, India, China, Pakistan, and Guatemala have introduced special scholarship and monthly stipend programs for girls. These programs can be costly but have shown a strong positive impact on girls' enrollment and have an economic justification in the social returns to girls' education.

Other options for reducing opportunity costs include allowing girls more flexible school hours to enable them to perform their household and agricultural work; attaching childcare facilities to schools so that girls do not have to stay home to care for younger siblings; putting maize mills in schoolyards; and introducing new technologies such as small kerosene stoves to reduce the time girls must spend gathering firewood and cooking.

Siting schools closer to communities and adding latrines for girls. A reduced distance to school tends to have a greater impact on enrollments of girls than of boys, as parents are often more reluctant to let their daughters walk long distances to school. The provision of separate latrines for girls also has significant impact on the attendance of girls—particularly of older girls. At the secondary level, there is some

evidence in countries such as Pakistan and Yemen that separate schools for girls can promote girls' enrollment. The cost-effectiveness of these relatively expensive approaches must be weighed in relation to other alternatives, however. At the basic education level in most countries, same-sex schools are not necessary to get more girls into school.

Hiring more female teachers and administrators. The absence of female teachers can be a barrier to girls' enrollment, as parents in some cultures feel uncomfortable allowing their daughters, especially adolescents, to be taught by male teachers. Hiring more female teachers, particularly teachers familiar with the local community, has been an important strategy for encouraging parents to send daughters to school in Pakistan and Nepal, and female teachers in all countries appear to serve as powerful role models for girls, positively affecting their attendance and persistence rates. It is important, however, that new female teachers, especially in rural areas, not be marginalized when it comes to in-service training. Special programs that aim to improve the teaching skills of rural and female teachers have been shown to have considerable positive impact on teachers' morale, attendance, and classroom practices.

The implementation of girls' education programs in countries such as Yemen, India, Bangladesh, and Pakistan has also demonstrated that female leadership helps to promote female education. In many cultures, it is difficult for males to exercise leadership on these issues or even to acknowledge the constraints preventing more girls from attending school. Female teachers, especially in rural areas, tend to be more comfortable dealing with female education managers. Female education leaders furthermore can also serve as role models for girls, parents, and teachers in rural communities.

Involving mothers in school management and supervision. In addition to the general benefits of parent involvement in school management and supervision, participatory school councils and village education committees that make a specific effort to involve mothers have been shown to have a positive impact on girls enrollments. "Mother education committees" established under India's DPEP and Pakistan's Balochistan Primary Education Program have brought more girls into school and have reduced their early dropout. Literacy and empowerment programs for women (see section 3.2) can also have a significant effect on the school enrollment and retention rates of their daughters.

Multifaceted strategies. While all of the above approaches have demonstrated results, the best progress has been in countries that have used social assessments, surveys, or other studies to identify the most important constraints and issues facing them and then to tailor a strategy package to their context. Examples include India, Bangladesh, Malawi, Uganda, and Bolivia. The state of Uttar Pradesh in India raised the basic education (gross) enrollment rate for girls from 50 percent to 98 percent in an eight-year period, and lowered their dropout rate from 60 percent to 31 percent. Country experience confirms strongly that addressing multiple concerns related to girls' education simultaneously in a coherent strategy can produce significant gains in relatively few years.

Ensure school affordability

Fees for school tuition, uniforms, textbooks, and stationery are a significant burden for poor families in many countries. Countries that have eliminated tuition fees, such as Malawi and Uganda, have registered large increases in basic education enrollments. Even where tuition is not charged, however, the costs of other items can put schooling out of reach for some families, and particularly for the rapidly growing number of orphans. Beyond eliminating tuition fees, it may be essential also to provide free books, materials, and uniforms for poor households to guarantee that these children stay in school.

Even where direct costs are not significant, the indirect costs of schooling for poor families—mainly forgone earnings and the value of contributions to household production—are large. The tragedy of orphans in many countries is that with no other income earners in the family, older siblings must drop out of school to support younger ones, perpetuating a cycle of poverty. To allow these children to remain in school, school systems may need to distribute targeted subsistence stipends, similar to Brazil's *bolsa escola*. Though essentially an income support program, the distribution of such family assistance through the school system, conditional on continued school attendance, may be the most effective way to promote both social assistance and educational goals.

Temporary use of such programs can also protect schooling participation during recession or financial crisis. Indonesia's targeted school grant program in the aftermath of the 1998 financial crisis succeeded in preventing a projected decline in school attendance. The fiscal costs of these programs can be relatively high, but the equity impacts, if they are carefully targeted, are substantial.

Adapt schools to student and community needs

The failure of schools to adapt to the needs of local communities can lower demand for education. Measures that schools can take to increase their attractiveness to the community and to encourage the support of parents include exercising flexibility in matching the school calendar to the local agricultural cycle; altering the daily timetable to enable children, especially girls, to perform household chores early or late in the day; ensuring that school premises are clean and safe; introducing into the curriculum subjects of particular value and relevance to the community; using local languages for instruction; and reaching out to the community with innovative services such as ECD programs, adult basic education classes at night, youth programs, or a community library.

Disaggregated analysis of enrollment data will help school systems to identify those communities where demand constraints appear most significant, and social assessments can be helpful in analyzing the factors underlying these constraints. The most effective way to ensure that schools respond to the needs and values of local stakeholders, however, may be the actions discussed in the section above headed "Improving quality" to increase the voice of the local community in school governance.

Postbasic and tertiary education

Secondary and higher education can provide people with the skills they need to secure formal employment and to work their way out of poverty. They provide nations with the critical high-level skills and knowledge needed for development by training professionals such as teachers, health workers, scientists and technicians, public and private sector managers, and researchers. All countries need at least a minimal science and technology capacity if they are to be able to use global knowledge and technology for their development. Recent floods in Mozambique, for example, were forecast by British meteorologists months before they actually occurred, but Mozambique lacked the local capacity to translate this information into national disaster prevention measures. Only one in five children attends secondary school in low-income countries and only one in 50 attends tertiary education. The challenge for many governments is promoting a balanced development of the entire education system while pursuing the rapid achievement of primary education for all, within the context of limited financial and human resources.

The relatively high private rates of return to secondary and higher education mean that there are more public policy alternatives to support the development of these levels than there are for basic education. The role of private (that is, household) financing is particularly important in postbasic education because of the high private returns and because participation at these levels is dominated by the nonpoor. At the tertiary level, the opportunity exists to use a variety of different policies, such as cost-sharing combined with income-contingent student loans, alternative governance structures in public education, and direct measures to stimulate private education supply. In Chile and Korea, the mobilization of substantial private financing at the secondary and tertiary levels played a crucial role in allowing the simultaneous achievement of universal basic education and the development of strong and diversified secondary and tertiary institutions. An important lesson from country experience, however, is that revenues mobilized through cost recovery must stay with the institutions that collect them and must be translated into visible improvements in education quality; if not, it can become impossible to attract continued student contributions.

In general, it is advisable to review the policy environment for private education to ensure that:

- the regulatory environment encourages high-quality private providers to expand the total capacity of the education sector;
- cost-sharing arrangements at the upper secondary and tertiary levels are equitable, given the expected private and social returns;

- education institutions have appropriate degrees of financial, managerial, and academic autonomy; and
- there are sufficient safeguards, such as scholarships, income-contingent student loans, work-study programs, and fee exemptions, to enable poor students to enroll in postbasic education.

At the upper secondary level, an important question that governments must answer is how much school-based vocational education and training (VET) to provide. A key consideration in this regard is the high cost of vocational education compared with general education. Establishing appropriate objectives is critical. VET can be effective when it meets clearly observed, current labor market demands, as in Chile, where the government has used a mix of financial incentives and decentralized provision (enterprise-based as well as school-based programs) to boost the development of skilled technicians for agriculture and industry. But many other countries have found that expanding VET is an ineffective way of trying to divert or dampen the demand for higher education, unless VET programs are of very high quality and effectively respond to demands from the labor market.

Access to secondary and tertiary education can be an important determinant of basic education completion. This is especially true for poor families, for whom resource constraints force choices to be made between education and other valuable investments. Even where the social rate of return to primary education is high, significant private benefits to the family may accrue only where there are good prospects for children to continue beyond basic education. In many countries, entry into the formal labor market depends on an upper secondary degree or higher. Investigators should establish if the inavailability of upper secondary education is influencing dropout in the higher grades of basic education. A simple answer may be found by looking at the correlation between dropout in basic education (available in EMIS statistics) and the availability of a nearby upper secondary school (from school mapping). The conclusions from such statistical analysis can be checked with parent interviews. If an adequate supply of secondary and tertiary education places is available, then the analysis should focus on who fills the places. If enrollment patterns clearly discriminate against children from poor families, there is a need for policies, such as scholarships, fee exemptions, and boarding opportunities, to help poor students enroll.

19.4.2 Eliminating adult illiteracy

Achieving and sustaining universal primary education completion is crucial for the progressive eradication of adult illiteracy, but nonformal education programs aimed at adults and out-of-school youths can be an important complement to the formal education system in countries where illiteracy is high. Effective adult basic education programs can contribute directly and powerfully to poverty reduction. By definition, they target the poor, especially women and girls, delivering crucial basic literacy and numeracy skills that can help disadvantaged individuals improve their livelihoods and quality of life. Adult basic education also has strong complementarities with primary education, not only by giving a second chance to those who have been missed by primary schooling, but also because parents who take part in adult basic education become more effectively supportive of primary education for their children. Efforts to meet the demand for adult basic education in communities where many parents are illiterate have been shown also to improve the conditions for community involvement in formal schools.

Most adult basic education programs are operated in some form of collaboration between the government and civil society, in the form of nongovernment (NGO) and community-based (CBO) organizations. The international track record shows that most programs succeed in retaining a clear majority of those who initially enroll, and bring most learners up to a modest level of literacy. Program types, sites, and operators vary widely, reflecting the diversity of needs of target populations; evaluation evidence confirms that the most effective programs are those that closely match the needs of their audience. For example, programs aimed at women's cooperatives often combine basic literacy and numeracy training with skills, such as basic household or business accounting, or with income-generating activities such as textile weaving or purchasing and running a grain mill. This diversity also points to the importance of consistent evaluation of program costs and effectiveness.

Compared to full-time schooling for children, adult basic education entails much less time each week from its students. The finance required for adult programs is overwhelmingly for recurrent

costs—the training and remuneration of instructors and facilitators (volunteer teachers can bring unit costs down but all-volunteer teaching forces are usually not sustainable over the long term or sufficient if programs go to scale) and learning materials. There is rarely a need to construct dedicated facilities. Costs per learner range from roughly US\$5 to US\$20 per year, depending on initial development costs and program scale, but they are invariably lower than the per-student costs of formal basic education.

Cost-effective adult basic education has the following elements:

- A framework of lifelong learning that specifically links adult/youth basic education with the main system of accreditation and that provides pathways for graduates to pursue further education.
- Voluntary participation in adult basic education.
- Free of charge. If the education and training provided is linked to income-generating activities, however, some cost recovery may be explored.
- Approaches adapted to respond to needs and use of local languages. A twin-track approach can (1) build literacy into existing interests such as agricultural and health extension, cooperative groups, or microenterprises, and (2) offer focused literacy and numeracy training to those who are interested mainly in these skills. Use the opportunities that training affords to disseminate important information on health issues, for example, and always link literacy and numeracy skills concretely to life, work, community and social issues, and development programs.
- Partnerships between government and civil society. Identify and capitalize on existing institutions and sources of social energy to maximize cooperation between government (local, central, and all departments that deal with poorer sections of the population), voluntary organizations (local, national, and international), community organizations, and the private sector.
- Where appropriate, the prevention of HIV and caring for AIDS victims as part of the curriculum.
- Facilitators are locally recruited and have adequate technical, moral, and material support, such as assistance from supervisors and professional networks, and that they are sufficiently accountable to their students to sustain their programs. Short-term contracts are usually appropriate.
- Reinforce the connections between the education of children, especially those from very poor families, and the education of parents.

The preparation of a PRSP offers an important opportunity for countries to reconsider the relationship between the formal schooling system and nonformal education. A clear policy framework can help governmental and nongovernmental providers of adult basic education identify target populations, ensure that curricula incorporate key health and other messages, efficiently deploy teachers and facilitators, make use of existing buildings, and coordinate approaches to communities. The government also has an essential role to play in establishing equivalency and certification standards for adult learners, collecting aggregate data on adult basic education enrollments and completion rates, and improving the assessment of adult literacy rates.

19.4.3 Other key policies

Macroeconomic and fiscal policies

Macroeconomic and fiscal policies determine the rate and volatility of a country's economic growth and the labor intensity of the activities that drive that growth; they are thus crucial factors in poverty reduction strategies. As noted above, policies also have a profound impact on the education system. First, the overall level of spending on education is largely determined by public expenditure decisions. Second, and perhaps more important, the rate and pattern of economic growth govern the returns to education, which affect individual schooling decisions.

Many countries suffer from mismatches between the economy and the education system. If the education system expands ahead of the economy, the phenomenon of unemployed or underemployed university graduates can arise, reflecting a huge cost to society from inefficient investments in education.

If the education system fails to keep pace with the economy, acute skills shortages can develop in key sectors. If the alignment between what is taught in schools and the skills demanded by the economy is poor, students may drop out of school rather than waste time in a low-return pursuit.

Research points to the importance of the following:

- Macroeconomic stability and labor-intensive growth strategies to maximize the returns to education.
- Broad-based basic education for all, rather than specialized or vocational education, to support faster diffusion of information and innovation in the economy, productivity gains, and competitiveness.
- Creation of a framework for lifelong learning through an accreditation system for a wide range of formal education and nonformal training modalities, including enterprise-based training programs, distance learning programs, and free-standing institutes. The goal should be a flexible education system that permits individuals to move between formal and nonformal training institutions over the course of a career or in response to changing labor market conditions.
- Creation of a wide variety of communication channels and collaborative arrangements between the education system and private industry, to permit the continuous realignment of education to serve the evolving demand for skills and knowledge.

Early child development (ECD) programs

Early child development interventions are a powerful lever for accelerating universal basic education. Uneven readiness to learn and late enrollment are important correlates of school dropout, grade repetition, and low student learning, especially among low-income children. Children that are born poor and that are deprived of basic stimulation and nutrition during their first years of life start out on a trajectory that is difficult to alter later. Compelling research in a wide range of countries has demonstrated that early interventions to protect children's health, nutrition, and emotional and intellectual development can help poor children enter school on a footing that is closer to that of their more affluent peers.

International experience shows that ECD interventions and daycare programs can produce a range of benefits, including improved nutrition and health, higher intelligence scores, higher school enrollment and attainment, less grade repetition, fewer dropouts, and increased female participation in the labor force (by mothers).

There is also mounting evidence that low-cost nonformal interventions, particularly those targeted to disadvantaged children, can yield measurable benefits. Nonformal programs, often operated out of a home in the community by a mother who has been provided with training and resources, can be cost-effective alternatives to formal preschool programs, especially if the program is designed to integrate health, nutrition, and early childhood development interventions. Nonformal early childhood programs are flexible in format and much less expensive to administer than formal kindergartens. By improving mothers' parenting skills, they can benefit younger siblings as well as the children targeted. Low-cost, nonformal ECD programs typically extend access to early childhood care and education programs to low-income children who would otherwise not receive such attention and for whom, research shows, the benefits are greatest.

Health and nutrition

A simple package of low-cost health and nutrition interventions aimed at school-aged children is one of the single "best buys" a country can make from the standpoint of the cost-effective use of health dollars (World Bank 1993). For as little as US\$0.30 per child per year, school health programs can dramatically reduce the number of days of schooling that children miss due to illness, and can ensure that children are sufficiently nourished to be able to focus on learning. Their cost-effectiveness in part comes from using the school network to screen children and distribute interventions. Where ministries of education and health cooperate on teacher training and on the design and delivery of these programs, the benefits for

both sectors are tremendous. As enrollment rates rise, school health programs become increasingly important, as some of the children who most need health and nutritional support—girls, the rural poor, children with disabilities—for the first time have access to schools.

A core group of simple and familiar interventions has been developed by WHO, UNICEF, UNESCO, and the World Bank. Known as the FRESH (Focusing Resources on Effective School Health) approach, these interventions are designed so that when supported by effective intersectoral and community partnerships, they can be used in even the poorest schools, in hard-to-reach rural areas as well as accessible urban areas. In brief, these interventions are:

- **Health-related school policies.** Establish a safe, secure, and psychologically supportive environment in schools; make sure that schools do not exclude pregnant girls or children with disabilities; encourage healthy, tobacco-free lifestyles; and provide counseling and support to children of families affected by HIV/AIDS or other catastrophic health issues.
- **Provision of safe water and sanitation.** Provide a healthy learning environment, reinforce hygienic behaviors, and ensure privacy, to promote the participation of adolescent girls in education.
- **Skills-based approach to health, hygiene, and nutrition education.** Focus upon the development of the knowledge, attitudes, values, and life skills needed to establish lifelong healthy practices and to reduce the vulnerability of children and teachers to HIV/AIDS.
- **School-based health and nutrition services.** Provide simple services to address problems that are prevalent and recognized as important within the community, including vision screening, micro-nutrient supplementation, and deworming.

Central to the cost-effective delivery of these school-level interventions are intersectoral partnerships, especially between the health service and the basic education system; partnerships with the community, especially parent–teacher associations (PTAs); and monitoring and evaluation, to ensure that children are of good health and that their school performance improves. Much more can be done, but if schools implement these four priority interventions they can quickly produce significant benefits and create a foundation for future expansion.

19.5 Identifying Feasible Actions and Setting Targets

The policy challenges facing low-income countries in education are numerous, and by and large are long-term in nature. These countries also must contend with major constraints in terms of resources and capacity. Yet they are under considerable pressure to show fast and measurable progress. This final section briefly considers the issues involved in developing feasible reform programs, in gauging the pace at which progress is possible, and in setting achievable targets. Section 19.5.1 focuses on setting priorities; section 19.5.2 considers the timeframe and institutional capacity requirements for different policies; section 19.5.3 looks at political issues; and section 19.5.4 provides guidance on monitoring and evaluation.

19.5.1 Identifying priority reforms

Once the priority issues affecting education outcomes for the poor have been established and the policies that address these issues identified, a reform agenda can be put together. This involves three important steps:

- analyzing costs, tradeoffs, and complementarities among policies;
- analyzing the time and institutional capacity required for policies to be implemented and to produce results; and
- analyzing the political payoffs and stakes that each policy entails.

There are no blueprints for these steps: all are heavily dependent on the country context. The following sections summarize some of the key issues to consider.

Analyzing costs and tradeoffs. The effectiveness of each of the policies listed in table 19.4 is supported by research or cross-country experience. The research evidence on their cost-effectiveness, however, is more

limited. The five best-researched exceptions, which have demonstrated a positive impact on student learning and attainment significantly exceeding costs in a wide range of country settings, are: (1) provision of books and learning materials (costing about US\$1.00 per student per year); (2) school health and nutrition programs (US\$0.30 per student per year); (3) double-shift schools; (4) multigrade schooling in rural areas; and (5) community preschool services for low-income children. (technical note P.4 reviews recent research on education cost-effectiveness in developing countries.)

Most of the policy options discussed in this chapter are essentially lower-cost approaches to things that school systems are already doing. Examples include the use of community-based construction instead of formal contracting, at up to 50 percent lower unit costs; simple teacher networks instead of costly residential in-service training programs; local teaching materials instead of imported books; and double-shift instead of single-shift schooling, where feasible. Other policies, such as the use of mother-tongue instruction or the introduction of stipends for girls, require increased expenditure but can be expected to generate savings that offset these costs by reducing student repetition and improving student learning.³ A third subset of the policies recommended are “close-to-no-cost” strategies for improving school effectiveness that are often overlooked, including assigning the best teachers to the first grade, enforcing the official school calendar, and distributing books and materials by the start of the school year. These are summarized in box 19.3.

Where there is a need to expand access to education, overall education spending will necessarily increase. One recent study estimated that achieving universal primary enrollment by the year 2015 in six HIPC countries in Sub-Saharan Africa would require, at a minimum, a 30 to 65 percent increase in annual spending on education between now and 2015 (Mingat 2000). In the absence of policy reforms to lower the unit costs of delivering schooling in these countries, expenditure would have to double. The policy recommendations in this chapter therefore focus on strategies for lowering the unit costs of service delivery while maintaining or increasing quality. This can be done: India’s DPEP and Bangladesh’s BRAC (Bangladesh Rural Advancement Committee) programs over the past decade have both expanded education access (targeted to girls and the poor) and raised quality, by developing lower-cost models of schooling focused on effective teaching and learning.

Education policymakers may, however, perceive a tradeoff between the expansion of nonformal adult basic education programs for adults and out-of-school youths and the pursuit of universal basic education for children. From an economic standpoint, it has often been argued that the shorter lifespan available to adults during which to reap the benefits of education makes adult basic education a lower-return investment than schooling for children. Ministries of education may also question any diversion of resources from basic education to adult programs, especially given the informality of many of these programs and the fairly wide variance in program unit costs and effectiveness.

The evidence of significant nonincome benefits and externalities (better health, nutrition, and educational attainment among children of literate adults) from investments in adult education, plus the potential for relatively rapid impact on family income generation, nonetheless supports the conclusion that in the context of a poverty reduction strategy, adult and youth literacy programs are a justifiable priority for countries with high adult illiteracy. Ministries of education can minimize tradeoffs by working with other providers, especially NGOs or other ministries, to build literacy and numeracy

Box 19.3. Low- or No-Cost Interventions That Can Improve School Quality

- Enforce the official length of school year and school week
- Assign the best teachers to first grade
- Establish a policy not to switch classroom teachers during the school year
- Extend the length of the school year (with no salary increment)
- Encourage parents to help children with homework
- Ensure that homework is graded, commented upon, and discussed by teachers
- Encourage teachers to show students the relationships between past and present learning
- Encourage students to monitor their own progress against learning goals
- Combine successive grades into “cycles,” with no repetition within each cycle

training into skills training programs or other adult outreach programs developed and delivered in other sectors and often financed in the context of other development projects.

Analyzing complementarities. For many countries, the incremental financial costs of introducing many of the policy reforms discussed here may be less binding than the institutional constraints and political costs. The goal therefore should be to develop a minimum policy package that is sufficiently comprehensive to address all key issues. The challenge for policymakers is to manage the tension between limited institutional capacity and resources and the fact that many issues are interrelated, and failure to align the key parts of a reform package can undermine its impact. For example, a policy decision to eliminate school fees may be easily made and quickly announced, but unless the school system is prepared with adequate teachers and learning materials to absorb the influx of enrollments (after the elimination of school fees in Uganda in 1997, enrollments doubled in a single year), the benefits will be questionable. Similarly, an investment modernizing the curriculum can be completely undermined if teachers are not retrained to teach it, and unless books, materials, and student learning assessments are revised to reflect it. The measures necessary to ensure such alignment, unfortunately, can greatly increase the scope, costs, implementation complexity, and timeframe of a reform.

There is no simple answer to this issue. Astute judgment is necessary to focus a policy agenda on the one or two key priorities most relevant in a particular country context and to ensure that all complementary components and actions are aligned. Strategies for managing policy alignment are discussed in the next section.

19.5.2 Analyzing the timeframe and implementation capacity

The relatively short-term perspective of HIPC assistance requires countries to identify policy actions that can be calibrated in months rather than in years. Yet virtually all key education outcomes require years to register measurable change. An essential part of PRSP preparation, to enable the development of reform strategies and especially the setting of feasible targets, is the analysis and understanding of the timeframe for the implementation of major policies and the rate at which progress can be expected.

Analyzing the timeframe for policies to work. In general, changes in the regulatory framework (for example, permitting community recruitment of a new teacher cadre, adopting community-based school construction, mandating local language instruction, extending the school year, or eliminating barriers to private schooling), funding arrangements (eliminating school fees, moving to a capitation-based school budgeting system), or governance rules (mandating school-level councils with parent involvement)—so-called structural reforms—can be quickly enacted by legislatures or promulgated by ministries of education. The decisionmaking process for these kinds of policies can be relatively simple, although not always—establishment of a new teacher cadre may be opposed by teacher unions, for example. However, it is important to realize that even for these reforms full implementation can take much longer, whether because of innate complexities (such as the hiring or retraining of sufficient teachers to teach in local languages in all regions of the country, setting up school-level bank accounts, and training parents for effective participation in school-based management) or because bureaucrats or other stakeholders opposed to the changes may have the power to undermine them (for example, district offices failing to transfer budgetary resources to schools).

A larger number of educational policies, particularly those related to quality, inherently take longer to implement, because they essentially seek to develop new skills and behaviors among key actors, above all teachers. The single most important classroom-focused intervention—eliminating traditional “frontal” teaching in favor of more student-centered and interactive approaches—calls for deep changes in teacher development, incentives, and support networks, with important emphasis on classroom follow-up and reinforcement. Alignment is crucial, as school directors and district supervisors must understand and reward the new practices, and new learning materials and sometimes even new classroom furniture are needed. For this single reform to be implemented meaningfully, a multifaceted intervention over a period of several years is required. For a perceptible impact on student learning, even more time is needed. The same could be said for most quality reforms.

A useful rule of thumb is that school systems should begin by reviewing the list of “no- or low-cost” policies for improving school quality (see box 19.3). If relevant, these actions generally can be quickly adopted and implemented. A second step is to see which structural reforms of regulations, funding, or governance arrangements are relevant, given the diagnosis of priority issues. In general, it should be possible to implement a high-priority subset of two or three reforms of this nature in an 18-month to two-year period.

Virtually all countries will seek to initiate longer-term quality reforms at the same time. Given the inherent complexity of these reforms (that is, the need to align a wide range of factors), the most practical strategies will focus on establishing rudimentary, but adequate, approaches first and then building these up over time. For example, India’s first steps toward the goal of more effective, student-focused teaching practice were to mandate local language instruction, eliminate the use of traditional textbooks, give small grants to teachers for the development of local teaching materials, redesign teacher development programs, and establish teacher networks and resource centers. Over time, all teachers have received significant retraining; the initially modest centers are becoming stronger, with more outreach to schools; richer sets of learning materials are being developed and shared; better student assessment is being introduced; and school directors are being developed as a professional cadre.

Analyzing capacity requirements. Clear goals are essential. Thereafter, instruments for assessing organizational capacity can be helpful in thinking through strategies for phasing in new functions, given the available capacity, and in developing capacity over time.⁴ Phasing in changes can give countries more time to take stock, measure progress, perceive what is working and what is not, make midcourse adjustments, and plan the next phase.

Setting targets. There is a need for explicit targets for improvement in key education outcomes that are both realistic and achievable but also stretch the system toward better performance as rapidly as possible (see chapter 4, “Development Targets and Costs”). Experience shows that political commitment and clear education goals can translate into rapid progress. For example, in Burkina Faso, Guinea, and Niger in the late 1980s, only about 30 percent of all children were enrolled in primary school. Over the next decade, Burkina Faso and Guinea achieved a 50 percent increase in enrollments (57 percent in Guinea), while Niger registered zero increase. From an even lower base (23 percent of children enrolled), Mali raised enrollments 109 percent over the same period. Quantum increases in the trend rate of progress are possible.

Gross enrollments in primary education in virtually all low-income countries are inflated by high repetition, however. Attaining the goal of universal primary completion requires improvements in schooling quality and reductions in student repetition and dropout. In short, school systems cannot expect to achieve universal primary completion without significant system transformation, in terms of quality and efficiency.

The importance of system transformation and higher efficiency in a poverty reduction context cannot be overstated. In Madagascar, for example, the primary gross enrollment ratio is over 100 percent, but only 27 percent of students graduate with no repetition. The education system must spend three times more to produce a primary graduate than it would in the absence of repetition. Without measures to improve system efficiency, achieving universal primary completion in countries such as Madagascar will require substantial school construction, additional teachers, and other resources. Yet the clear implication of student flow analysis is that such expansion would be a serious waste of resources, since the education system already possesses enough physical capacity and teachers to meet the needs of universal primary completion if system efficiency could be improved.

Countries following the diagnostic process set out in this chapter will be able to evaluate in some detail the internal efficiency of their education system. This will increase the likelihood that specific country targets for key education outcomes are both appropriate and achievable.

19.5.3 Analyzing the political feasibility of reforms

Change in education can be highly contentious, especially when key stakeholders perceive they will lose in the process (that is, will be cost bearers of reform). Examples of this include attempts by ministries of education to introduce changes in teacher contracting that would affect job stability or wages, or changes in education governance that would cause bureaucrats at the central level to lose decisionmaking authority to lower tiers of government or to schools.

Some countries have nonetheless achieved significant transformation of their education systems over the past five to 10 years: Brazil, India, Uruguay, and Uganda stand out among developing countries, along with a number of OECD countries. It is possible to manage the political costs and institutional forces that otherwise would block education reform.⁵

Specific strategies depend heavily on the country context: not only on the current performance of the education system and the nature of the issues but also, importantly, on such factors as the degree to which key actors, such as teachers, are politically organized; the relationship of teacher unions with the party in power; the degree to which reform is proceeding in other sectors; and the political strength, commitment, and skills of the minister of education.

Across a number of reasonably successful education reform cases, strategic choices and characteristics on the part of the ministry of education have proven to be important. These range from the ability to articulate a coherent vision for long-term development of the sector to the ability to deliver tangible short-term benefits at the school level, and they are elaborated below.

Vision and public support. Developing a coherent long-term vision for improving the education sector that addresses key bottlenecks and is technically feasible is the first challenge. Successful reformers invariably also stress the importance of effectively communicating that vision to mass audiences. Appeals to civil society can be used to influence bureaucratic and political leaders who are not firmly committed to reform, for example, and can turn parents and communities interested in the reform’s benefits into a force for monitoring its implementation. Making sure that the communities who will benefit know what to expect can transform a largely unmobilized political force into one that counts, particularly in open and contested political systems. Successful ministers of education make extensive use of mass media and communications techniques, devoting serious attention to shaping the public debate over reforms, framing abstract technical concepts such as accountability in vivid human examples, linking education strongly to national economic growth and competitiveness goals, and invoking powerful connections to national symbols and values.

Delivering quick wins. It takes years before serious progress in the outcomes that are the ultimate objective of education reform, such as primary completion rates and student learning, can be documented. Successful reformers realize that it is impossible to sustain political support for change over periods this long unless beneficiaries and stakeholders perceive some gains. Reform processes must therefore deliver some “quick wins” in the form of visible changes at the school level that benefit parents, communities, and teachers. For parents and students, tangible benefits can include such things as the elimination of school fees, on-time delivery and free distribution of books and materials, the establishment of community schools nearby, and the involvement of parents in school councils. For teachers, the provision of small grants for the development of local materials, quality teaching manuals and other resources, and the establishment of teacher networks and resource centers are among the short-term benefits the system can offer.

Managing opposition. A major challenge of education reform is that it inevitably involves distributing costs as well as benefits. The largest cost bearers are usually teachers, who typically face increased performance pressures, such as new teaching methods, larger classes, enforcement of the school calendar, more accountability to parents and community members, competition from a new teacher cadre, and sometimes even downward adjustment of benefits. Other cost bearers are typically central or district bureaucrats who may lose control over resources such as school budgets and construction contracting or lose power (for example, the ability to influence student access to desired schools, or plum teacher assignments) and the corresponding corruption opportunities. Political mapping tools

can be helpful in evaluating potential sources of reform support and opposition (see Crouch and DeStefano 1997).

One striking finding is that major cases of education reform exhibit two distinct strategies for managing reform opponents:

- co-opting key cost bearers by drawing them into the definition of reform goals and implementation through participatory approaches; and
- isolating or working around cost bearers or opposition groups such as teachers' unions by building alliances with other stakeholders, such as parents and communities, school principals, and the business community.

The most viable option will depend on the particular political circumstances, such as the strength of the teachers' union compared to that of other interest groups, but it is worth noting that participatory processes work best when they do not involve fundamental differences in values. For example, trying to gain the explicit support of the teachers' union on core issues such as decentralizing teacher hiring and firing to the school/community level is likely to be impossible. Another basic lesson is that participatory approaches work best when they draw groups with relevant expertise into the consideration of technical design or implementation issues. Drawing communities into the identification of changes that would adapt the curriculum better to local issues and priorities is likely to be productive; consulting communities on the design of a national student assessment system would likely not be.

If neither co-opting nor isolating reform opponents is politically viable, reformers must explore bargaining options. They must either change the proposed policy so as to make it more palatable to opposition groups or, very commonly, try to package different policies in such a way that opposition groups achieve some visible gains that are important to them while accepting some changes or costs that are important to move the reforms forward.

Demonstrating and communicating results. A final common feature of successful education reform efforts is that they increase the transparency of the education system, making parents and the country at large more aware of how the system is performing. This is partly because reform processes often start with highly visible public debates and data about the system's poor performance, intended to create a sense of crisis and thus build pressure for change. But it is also because successful reform programs often involve explicit efforts to improve system performance data (for example, EMIS, student assessment, and teacher attendance records) and communicate these results more openly to parents or the public, in order to tighten schools' accountability.

Effective reformers use these results to communicate progress, both within the administration and to the public at large, to nurture support for the reform process. Initiatives such as weekly radio broadcasts; high-publicity awards to outstanding teachers, schools, or school districts; and visible new partnerships between businesses and technical schools can have high payoffs in building awareness of reform progress and strengthening support. More, and more open, feedback to education system actors also helps to stimulate better performance. In short, successful education reform efforts can transform a sector widely perceived as a nonperforming fiscal drain into a sector with high and positive political visibility.

19.5.4 Monitoring and evaluation

Monitoring reform processes and outcomes and evaluating impact are crucial, both for effective management of reform implementation and for building sustained political support, as follows:

- ***Monitoring processes*** involves tracking progress in implementing the program as planned. Process monitoring is the early warning system that enables managers both to identify and to resolve the problems that inevitably will arise and to take advantage of unforeseen opportunities that can also develop during reform implementation.
- ***Monitoring outcomes*** involves tracking progress against goals. Specifically, it aims at monitoring trends in outcomes over time and across groups and areas, collecting information to study the determinants of such outcomes, and providing feedback to policymakers on the effectiveness of different approaches.

- **Impact evaluation** assesses changes in the well-being of individuals that can be attributed to particular programs or policies. It is a decisionmaking tool for policymakers and makes it possible for programs to be accountable to the public. Impact evaluations can inform decisions on whether to expand, modify, or eliminate a particular policy or program and aid in prioritizing public actions.

(Chapter 3, “Monitoring and Evaluation” provides more definitions and examples of good design of monitoring and evaluation systems.)

Monitoring and evaluation have several benefits in terms of improved accountability, increased stakeholder ownership, and broad-based support of policies, programs, and projects. Monitoring results can help to modify policies, programs, and projects during implementation and can thereby improve the effectiveness of interventions.

A good example of attention to monitoring and evaluation in the context of a major education reform comes from India’s DPEP, which aims at achieving universal primary education. DPEP’s design was founded on a careful analysis of a wide range of earlier programs and an administrative structure that has explicitly tried to evolve as a learning organization, promoting experimentation, learning, and correction. As a result of monitoring and evaluation, new interventions have continuously been introduced, based on the emerging lessons of implementation experience and analysis of newly generated data. The learning-by-doing approach enabled by an effective monitoring and evaluation system has proven to be an important capacity-building strategy for DPEP (see box 19.4).

Key elements of good monitoring and evaluation practices include:

- **Participatory approaches.** If civil society, especially the poor, is involved in monitoring the implementation of public policies and programs, it will be better able to influence service providers and policymakers to improve service delivery. When consulted, local people are invariably willing and able to provide valuable information on the shortcomings of services and on the ways to improve them.
- **Inclusion of an impact evaluation strategy.** Outcome monitoring should be complemented with impact evaluations to help determine the extent to which improvements in outcomes are due to specific public actions. Impact evaluation must be built into the design of a policy intervention at the start, with the collection of clear baseline data and a framework established for monitoring outcomes and impact over time.
- **Improved budgetary management.** Monitoring of education outcomes should be complemented by a strengthening of the institutions and practices of expenditure management to enhance the transparency, accountability, and efficiency of public spending.
- **Dissemination of results.** Monitoring system results and the results of program and project evaluations should be widely disseminated to different groups in civil society, as well as to policymakers, program managers, program beneficiaries, the general public, the media, and academics.

Box 19.4. Improving Program Monitoring and Evaluation: India’s District Primary Education Program (DPEP)

Significant improvement in the quality of information available has been achieved by DPEP in just five years. Education statistics in participating DPEP districts are timely and accurate, and have become the accepted basis for policymaking and research. Problems such as declining intake trends in grade one in some DPEP districts, single-teacher schools, and schools with excessively high or low pupil–teacher ratios can now be quickly identified, analyzed, and acted upon in ways that before were not possible. The extent to which DPEP’s managerial culture of data-based analysis and “thinking through” problems has diffused across the elementary education system is one of the program’s most important achievements.

Source: R.S. Pandey, “Going to Scale with Education Reform: India’s District Primary Education Program, 1995–99,” Education Reform and Management Series I(4), July 2000.

Acronyms and Abbreviations

AIDS	acquired immune deficiency syndrome
BLC	basic learning competencies
BRAC	Bangladesh Rural Advancement Committee
CONAFE	Consejo Nacional de Fomento Educativo
CONFEMEN	Conference des Ministres de l'Éducation des Pays Ayant le Français en Partage
CBO	community-based organization
DPEP	District Primary Education Program (India)
ECD	early child development
EdStats	Education Statistics Database (Education Department, World Bank)
EFA	Education for All
EMIS	Education Management Information System
ERM	education reform and management
FRESH	Focusing Resources on Effective School Health
HH	household head
HIPC	heavily indebted poor country
HIV	human immune-deficiency virus
IALL	International Adult Literacy and Lifeskills Survey
IALS	International Adult Literacy Survey
ICT	information and communication technologies
IEA	International Association for the Evaluation of Educational Achievement
LSMS	Living Standards Measurement Survey
MLA	Measuring Learning Achievement (Project)
OREALC	Oficina Regional de Educación de la UNESCO para América Latina y el Caribe
PASEC	Programme d'Analyse des Systèmes Éducatifs des Pays de la CONFEMEN
PIRLS	Progress in Reading Literacy Study
PISA	Program for International Student Assessment
PTA	parent–teacher association
SACMEQ	Southern Africa Consortium for Monitoring Educational Quality
TIMSS	Third International Mathematics and Science Study
VET	vocational education and training

Notes

1. Thirteen Latin American countries joined a 1999 assessment sponsored by UNESCO/Latin America, and African countries have participated in the PASEC, MLA, and SACMEC assessments of reading and math.

2. Information on public spending can be found in the government budget but it should be noted that government statistics will not always include flows of official development assistance, which are important in HIPC. Comparative statistics are available in the UNESCO *Statistical Yearbook*, the World Bank's *World Development Indicators*, and public expenditure reviews for selected countries.
3. The international cost-effectiveness research on these policies is less extensive than for the policies mentioned in the previous paragraph, however.
4. The web-based tool for "Assessing Organizational Capacity" developed by Elie Orbach of the World Bank is a good example.
5. For a useful overview, see Corrales (1999).

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