

Education

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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, The World Bank)
EFA	Education for All
EMIS	Education Management Information System
ERM	Education Reform and Management
FRESH	Focusing Resources on Effective School Health
GDP	Gross Domestic Product
GNP	Gross National Product
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 Communication Technologies
IEA	International Association for the Evaluation of Educational Achievement
LSMS	Living Standards Measurement Survey
MLA	Measuring Learning Achievement (Project)
NGO	Non-Governmental Organization
OECD	Organisation for Economic Co-operation and Development
PASEC	Programme d'Analyse des Systèmes Educatifs des pays de la CONFEMEN
PIRLS	Progress in Reading Literacy Study
PISA	Program for International Student Assessment
PPP	Purchasing power parity
PRSP	Poverty Reduction Strategy Paper
PTA	Parent Teacher Association
SACMEQ	Southern Africa Consortium for Monitoring Educational Quality
TIMMS	Third International Math and Science Survey
UNESCO	United Nations Educational, Scientific and Cultural Organization
UNICEF	United Nations Children's Fund
USAID	United States Agency for International Development
VET	Vocational education and training
WHO	World Health Organization

Overview

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 in their country context.

Part I 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.

Part II focuses on *diagnosing education system performance*. Good policy begins with sound diagnosis. A three-step process is proposed: (i) benchmarking key education outcomes; (ii) analyzing public and private expenditures on education; and (iii) using “decision tree” analysis to probe more precisely the underlying causes of poor outcomes in a particular country.

Part III focuses on *reform strategies and high-impact programs*. It summarizes what we know from country experience and research about policies and programs that can redress the problems identified. It looks at experience to date in HIPC (Heavily Indebted Poor Country) and PRSP countries seeking to improve education for the poor. Finally, it presents emerging ideas about “best buys” in education – the policies and program interventions that promise the strongest impact on educational opportunities and outcomes for poor children and illiterate adults in the short-to-medium term.

Part IV provides guidance on assessing the *political and institutional feasibility* of alternative policies and programs and *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 time to carry out the full diagnostic process set out in this chapter, nor the capacity to implement the full range of reforms discussed in Part III. Rather, the “good practice” analytical approach and broad overview of relevant country experience with education reform presented here are intended as 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.

Part I: Education and Poverty

1.1 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. More than 113 million children (the majority girls) in the developing world never enter a school and some 880 million adults remain illiterate. Unacceptable proportions of children who enter school leave without acquiring sustainable literacy. At current rates of education expansion, it is projected that even by 2015 over 100 million school-aged children will still not be in primary school.

This would seriously compromise countries' 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 – girls, ethnic minorities, orphans, people with disabilities, and people living in rural areas. Extending adequate quality basic education or literacy training to disadvantaged individuals is crucial to equip them 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 which HIPC and other low-income countries are seeking to stimulate, and without which long term poverty reduction progress is impossible. Education directly contributes to increased worker productivity, more rapid technological adaptation and innovation, and better natural resource management. Education is fundamental for creating a competitive, knowledge-based economy, not only for the direct production of the critical mass of scientists and other highly skilled workers that every country – no matter how small or poor – requires, but also because broad-based education is associated with faster diffusion of information in the economy, which is crucial for workers and citizens in traditional as well as modern sectors to increase productivity.¹

These impacts are strongest where education is integrated into a broader competitiveness strategy of macroeconomic stability, trade openness, incentives for foreign investment, competitive telecommunications pricing and adequate infrastructure investments. But in reality no 21st century economy can expect to develop a productive workforce, able to take advantage of globalization, without a well-functioning education system. And finally, a growing body of research documents the connections between education, the quality of institutions, and social cohesion: nations in which most of the population is literate and all children complete at least a basic education have higher quality institutions, stronger democratic processes, and, as a consequence, more equitable development policies.²

¹ Michael Porter, 1998, "Microeconomic Foundations of Competitiveness: The Role of Education"

² Josef Ritzén, William Easterly and Michael Woolcock, 2000, "On 'Good' Politicians and 'Bad' Policies: Social Cohesion, Institutions, and Growth"

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 5-9 year cycle, depending on the country) and increasing adult literacy through cost-effective programs. Consistent with the International Development Goals and 184 countries' commitments at the 2000 Dakar Education for All (EFA) forum, three key goals are taken as cornerstones of the education component of any poverty reduction strategy: 1) raising the share of children who complete an adequate quality **primary education**, towards the goal of universal primary education completion by the year 2015; 2) eliminating gender disparities in primary education by 2005; and 3) increasing the share of the adult population that is literate.

International fora 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. Girls' education fosters higher rates of female participation and productivity in the labor market, raising economic output. It also directly supports improved family welfare, which reduces 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, seek pre- and post-natal care which lowers maternal and infant mortality, and 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 keep them there longer, and are more responsive to adoption of environmentally friendly technology, which protects a countries' natural resources. Investments in girls' education go a long way towards reducing poverty and promoting economic growth.

Adult literacy programs are also important in poverty reduction strategies. While the universalization of primary education for children eventually eradicates adult illiteracy, countries with high illiteracy cannot afford to wait a generation for the impact on incomes and poverty. Literacy and other basic skills imparted to adults and out-of-school youths through non-formal programs not only directly improve family income generation, but also have strong positive impacts on family health status, children's educational attainment, and sustainable management of local natural resources. A widely reported outcome among adult learners is a sense of empowerment and 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. From a gender perspective, it is especially important: women outnumber men in most adult basic education programs – sometimes by wide margins. In short, as in interim strategy until universal primary education is achieved, non-formal education programs can equip the poor for economic development and social participation, and through such empowerment promote the development of a broad-based, and more equitable, society.

But even countries well short of achieving universal primary education and adult literacy must think about the balanced development of all levels of their education system. At the pre-school level, countries are under increasing pressure from communities to expand coverage, 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 enrollments in primary education quickly creates pressures for secondary school and tertiary education expansion and it is important to put in place a policy framework that assures quality, relevance, and equitable and financially sustainable expansion at these levels. The secondary and tertiary levels produce a country's science and technology capacity – crucial for economic growth and technology adaptation and innovation – and 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 balanced and efficient development of their overall education system.

Complicating this challenge in many low-income countries is the HIV/AIDS pandemic, which poses major threats to education systems. The worst affected countries are currently in East and Southern Africa, but the epicenter is shifting towards 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, as more than 10% of teacher training graduates will die of HIV/AIDS within 5 years of entering the service. With this level of attrition, it is imperative not only that teachers be trained in larger numbers, but also more cost-effectively. An even larger issue for school systems is the 35 million or more “AIDS orphans” projected in Africa over this decade (up to 20% of the school-aged population in some countries), children who have lost their mothers to AIDS, but who in many cases are themselves HIV-free. Without special assistance, these children, who have no other source of family income and younger siblings to take care of, are at high risk of dropping out of school and perpetuating a cycle of poverty.

In sum, long-term plans for education must embrace policies across all levels and all types of education and training. Indeed, 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 expanding the participation of low-income students at the higher levels of education.

1.2 A conceptual framework for improving the education of the poor

Education outcomes are influenced by many factors, only some of which are directly controlled by education policymakers. Fig. 1 below 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 macro level (column D), on the right. In this framework, diagnosis proceeds from the left side, working backwards from desired outcomes through an analysis of the causal factors on the right. But 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.

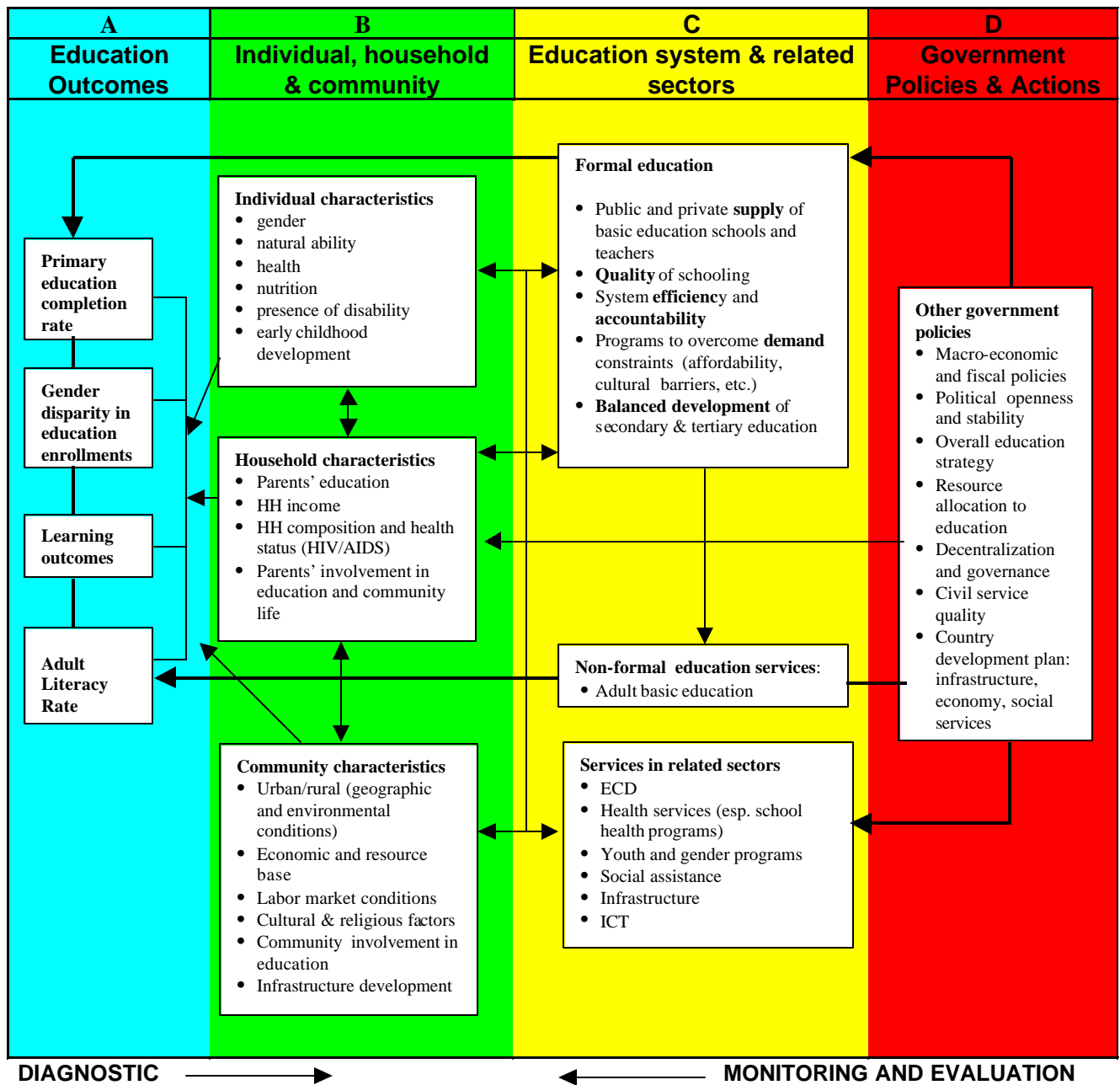


Figure 1: Determinants of Education Outcomes

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 rationale for these and other key indicators, intermediate indicators that are linked to these outcomes, and measurement issues involved in tracking them, are all discussed in section 2.1, below.

Individual, Household and Community Factors. Education outcomes are powerfully linked to individual factors such as aptitude, motivation, gender, presence of physical or mental disabilities, and access to early childhood nutrition and stimulation programs; the last is especially important for at-risk students. Research also documents that students' school attainment and learning are correlated with household income, birth order and, very importantly, parents' and especially mothers' education. Eclipsing some of these factors are family catastrophic health problems and parents' death, which increasingly are disrupting children's schooling participation and attainment in many African countries.

A range of community factors also impact education. The availability of roads, public transport, water, and electricity lower the costs of reaching all children with accessible schools. Electricity and telecommunications can make possible quantum leaps in schooling quality through the use of computers, distance delivery and internet access. Access to early childhood development programs, nutrition programs, and health care facilities in the community makes for healthier and more successful students. And whether or not there are jobs for school leavers in the local or regional labor market strongly affects the demand for education.

Education System Performance. Education ministries typically absorb 2-5% of GDP and are often the largest (non-defense) sector in the overall government budget. Private spending on education often represents several percent of GDP as well. In every country in the world, huge resources are devoted to formal education systems. However, system performance varies widely across countries – in terms of quality, coverage, and efficiency. Many low-income countries spend an equivalent share of national resources on education as more developed countries, but produce much lower outcomes. The special challenge for HIPC and other low-income countries is to achieve a quantum jump in the “bang for the buck” of 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 (such as involving parents and communities in school-based management), financing (using transparent formulas to make per-student funding more equitable) and management (direct measurement of student learning outcomes and other measures of school performance, fed back to schools) to tighten system accountability.

Finally, research clearly demonstrates that non-formal education services such as community-based early child development programs (ECD) and 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. Overall fiscal policy and the share of the budget allocated to education, civil service policy, and the quality of government generally have an important impact on education sector performance. Even more crucially, 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, which cumulatively determine whether a country's growth path is labor-intensive and innovation-intensive, or not,

strongly affect demands for education and for different disciplines and career streams within education.

In sum, achieving education goals for the poor depends to an important degree on actions and policies outside the education sector.

Figure 1 implies three different levels of intervention and in a sense three different audiences for this analysis. For macroeconomic policymakers, etc. (col. 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 (col. C), the challenge is making the system – including public and private providers – function better for the poor through better policies, incentives and system management. And for those (col. B) engaged in delivering community-level programs, above all in the area of adult literacy, the need typically is for better information about interventions' costs and impact and better coordination with those working at the system and macro-expenditure levels. Reaching the poor typically requires reforms and new efforts at all three levels.

Part II: Diagnosing Education Sector Performance

The first step in formulating an effective strategy is sound analysis of education outcomes, education system performance, and the other factors influencing those outcomes. This section outlines a three-step diagnostic process:

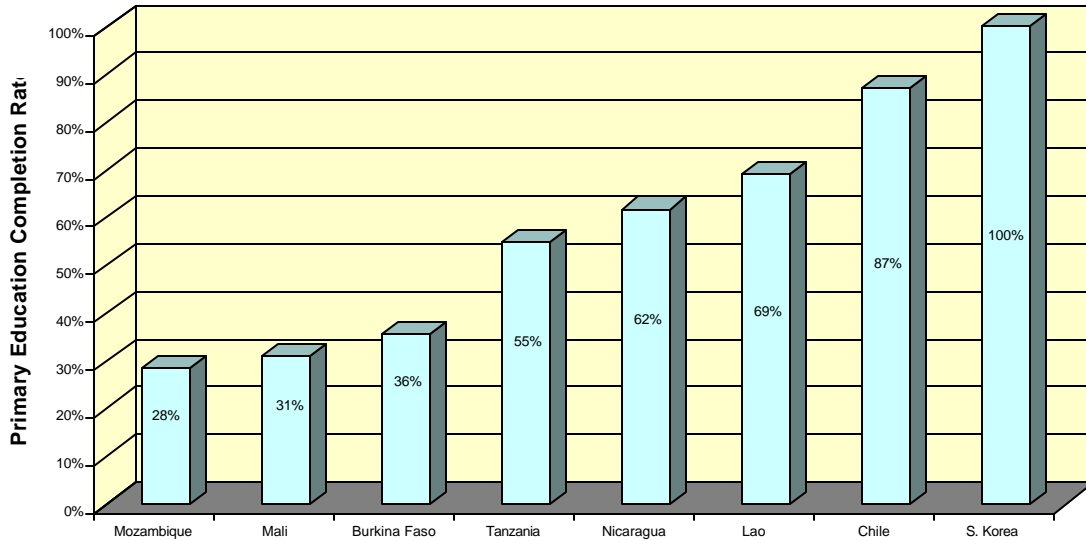
1. benchmarking education outcomes
2. analyzing public and private expenditures
3. probing the underlying causes of unsatisfactory performance via “decision tree” analysis.

This diagnosis leads to identification of the different **policy levers** with the greatest potential impact on educational outcomes within a given country context. Depending on the country, these levers will be some combination of policies and programs which operate on broad socio-economic factors, or actions in related sectors, or reforms in the education sector.

2.1 Key education outcomes

Low-income countries are characterized by the low share of the children who attend and complete primary education (Figure 2 below), sharp gender disparities in education enrollments (Figure 3), and the low share of adults who are literate (Figure 4). Abundant research indicates that progress in these area is powerfully linked to poverty reduction. Consistent with this research, and with the International Development Goals and country commitments in the context of EFA, three key outcomes for HIPC and other low-income countries to monitor are:

- the primary education completion rate;
- gender disparity in education enrollments; and
- the adult literacy rate.



Note: The duration of primary education in Chile is 8 years, in Tanzania is 7, in Mozambique is 5, and in other countries in the graph is 6 years.

Figure 1: Primary Education Completion Rate in Selected Countries

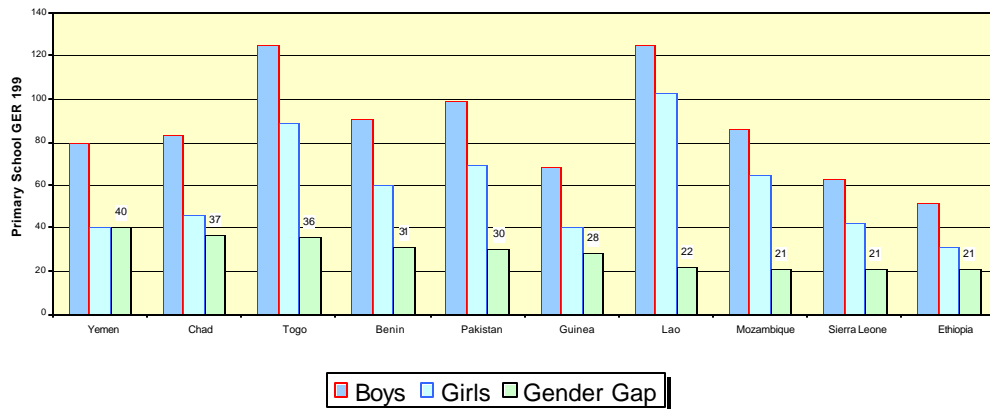


Figure 2: Gender Gap in Primary School Enrollments in Selected Countries

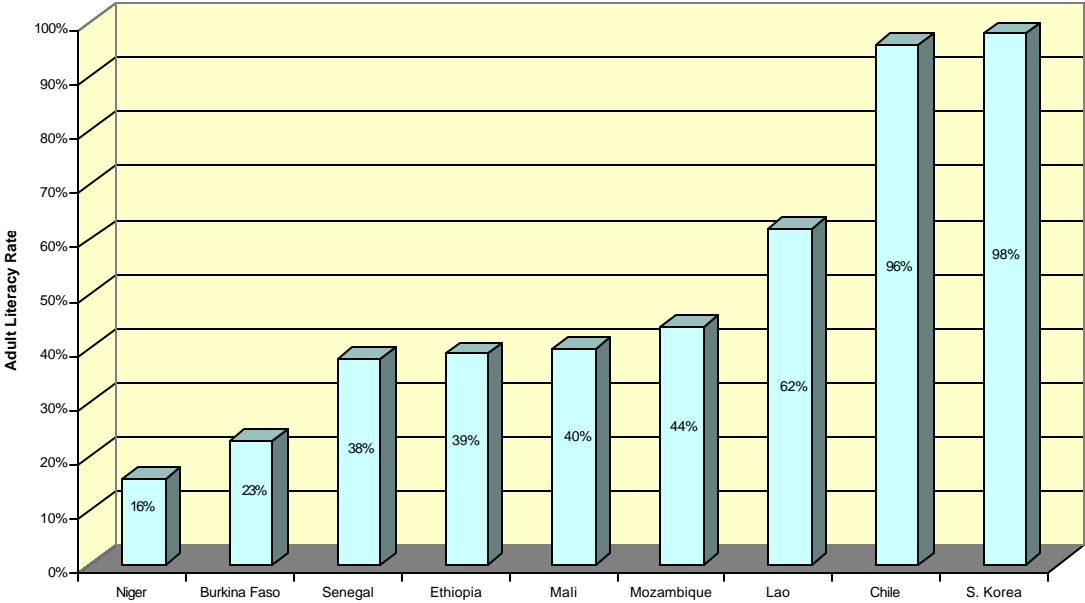


Figure 3: Adult Literacy Rate in Selected Countries

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 Math and Science Survey) and other international studies show that student learning (at least in the curriculum areas measured) is also relatively lower in low-income countries (Figure 5 below).

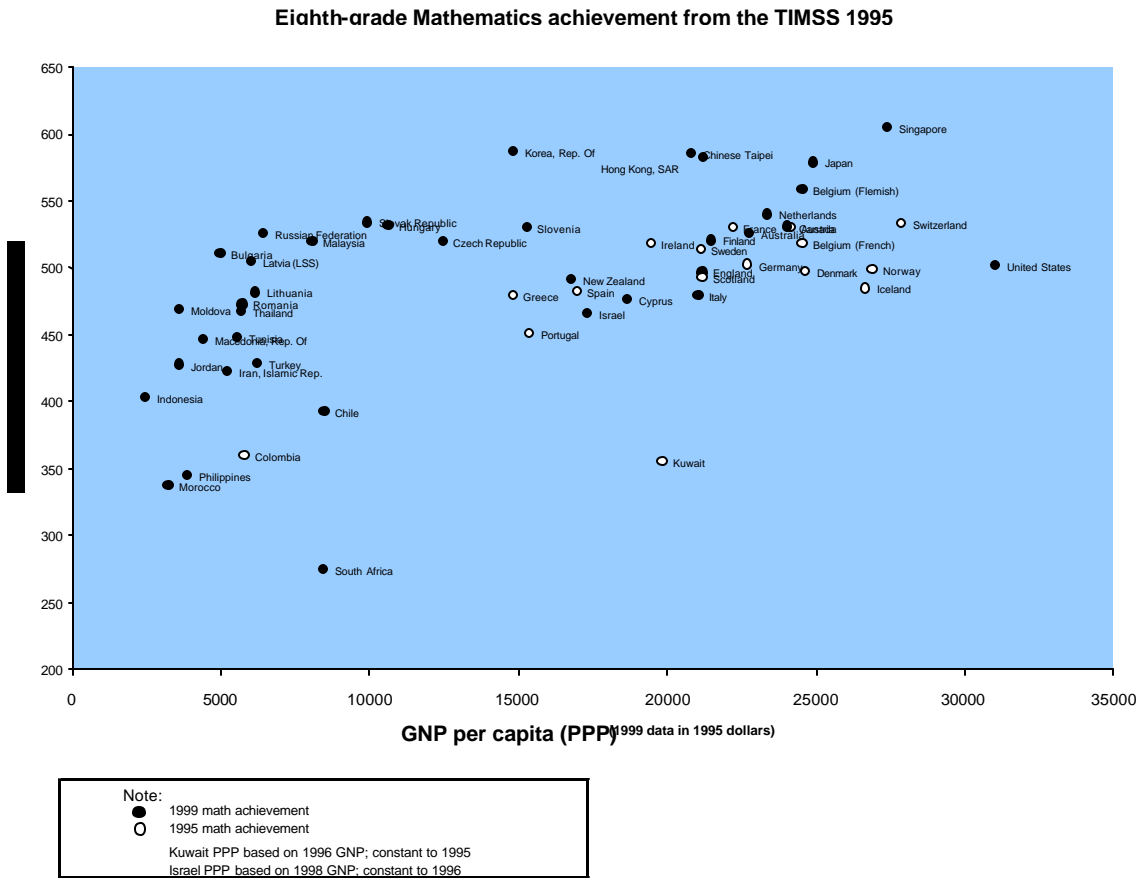


Figure 4: Student Learning Achievement in Mathematics

As central as these four outcomes are, however, tracking them is not straightforward. The following sections analyze the issues involved in measuring these key outcomes directly and proxy indicators that can be used in the absence of direct measures. Finally, as some of these measures are slow to change in response to new policies and investments, countries will want to monitor a range of intermediate indicators which can provide “leading indicators” of the direction in which key outcomes are moving.

2.1.1 Primary education completion rate

The goal of countries committed to “Education for All” is that every child in a society has the opportunity to complete a primary education of adequate quality. There is general agreement among educators that this implies at a minimum 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 7 or 8 years and often referred to as “basic education” – encompassing primary and lower secondary education – and more sophisticated goals of developing critical thinking skills and “learning how to learn” are added. For the

majority of PRSP countries the official length of the primary cycle is currently six years (see Annex I). This paper pragmatically assumes that countries will first concentrate on

achieving the goal of universal *primary* education completion (whatever the length of the cycle in their country) and then extend the goal to universal *basic* education completion. Thus, when discussing the specific indicator, this paper will refer to primary education. But when discussing the education system and policies more generally, it will refer to the broader concept of basic education.

In order to track progress, countries want to know what share of **all** children complete primary education and they will want to achieve continuous progress in increasing this share, up to the goal of 100% by the year 2015. Because the length of the primary cycle differs, UNESCO tracks the share of students who complete five years of basic education across all countries. However, this indicator can be somewhat misleading as it does not reflect the share of children not in school, which can be large in very low income countries.

Tracking primary education completion is complicated by the large share of children in many developing countries who repeat grades, drop out of schooling before completion, and move in and out of different schools, including to non-formal schools which often are not captured in official enrollments. Some students enter primary school before the typical official entry age of 6, 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 under-aged and over-aged (late entry and repeater) students. But this simple measure has several advantages: it follows a 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 under-aged 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 towards the EFA goal of universal primary education completion. As such, it may be used to set meaningful targets; as the primary completion rate approaches 100%, a country is making indisputable progress towards the goal of EFA.

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 simply because the efficiency of the system worsens (ie, increases in student repetition) and which provide no indication of the share of students actually completing primary education. Annex I provides more detail on data sources and methodology for calculating the primary completion measure recommended here. It is important to note, however, that in many African countries “graduation” from primary education is not as clearly delineated in education statistics as it is in other parts of the world. 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 the net enrollment rate in the final year of primary education. Annex I provides a definition of this as well.

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 graduating 100% of children through 5 years of schooling with no repetition

are much lower than the costs to society of (eventually) graduating 100% of children through 5 years of schooling with, on average, 3 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%) more to achieve the same education outcome. So it is important to track children's entry and progress through the primary cycle. Annex I also discusses how to estimate the **years of schooling input per graduate, cohort completion rates** and other measures of the efficiency of student flows.

Finally, a key part of PRSP preparation will consist in analyzing variations in the primary completion rate for low-income and vulnerable groups, as suggested in Box 1. From a poverty reduction standpoint, identifying and reducing disparities in primary completion associated with gender, ethnicity, disability, region and income group is as important a goal as moving the overall completion rate. In general, Ministry of Education statistics will have data by gender and region, but household survey data will be needed in order to analyze disparities by income decile or ethnicity. Annex II presents a useful template for disaggregating data on primary education completion, which can be easily adapted to other indicators as well.

Box 1: Primary completion rate (or other indicators) disaggregated by:

- Gender
- Income decile or quintile
- Urban/rural, or by region
- Ethnic group (if applicable)
- Specific vulnerability (orphan status, disability, etc.) if available

Achieving 100% primary education completion is the most important long-term goal for any low-income country. However, this indicator is slow to change and policy actions taken today will not produce movement in the completion rate for several years. In a HIPC context, especially, countries need to identify **intermediate indicators** that can give more timely insight into the impact of policy changes. The most important "leading" indicator is the intake rate into grade one. Repetition and dropout rates are also important to monitor. Strategies that result in more girls enrolled in grade 1, or lower repetition or dropout, can be expected to produce improvements in the primary completion rate over time. Thus, monitoring these intermediate indicators is essential for evaluating policy impact.

Box 2: Intermediate Indicators for Primary Education Completion

- Primary intake ratio or entry rate to grade 1
- Number of children out-of-school
- Gross enrollment ratio (in each grade, esp. in final grade of primary)
- Net enrollment ratio (in each grade, esp. in final grade of primary)
- Grade by grade enrollment profile
- Survival rate to grade 5
- Repetition rates (by grade)
- Drop-out rates (by grade)
- Teacher-student ratio
- Pupils per classroom ratio

2.1.2 Gender disparity in education enrollments

In close to 40 low income countries, primary (and secondary) enrollment and completion rates for girls are sharply lower than for boys. Figure 3 shows how large the disparity can be. Where significant gender gaps exist, it is appropriate to set specific targets for increasing girls' participation and completion rates. As discussed later (see section 3.1.3), countries such as India, China, and Bangladesh, which set explicit and highly visible targets for closing the gap between girls and boys enrollments over the past decade have made impressive progress. 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. The primary intake ratio for girls is a crucial intermediate indicator, as it is the place where progress in promoting girls education will register fastest and most sharply.

2.1.3 Adult literacy rate

The prevalence of adult illiteracy in a country is one of the strongest correlates of poverty. While extending school access to all children is a crucial goal, HIPC and other very low income countries cannot afford to wait the generation it takes for the full impact of these reforms on income and poverty. The experience of countries such as Korea and China that have made rapid progress in reducing poverty suggests that complementing the expansion of the *formal* system of basic education (for children) with cost-effective *non-formal* basic education and literacy programs aimed at adults and out-of-school youths is important.

A major complication is the weakness of adult literacy measures. While virtually all countries report adult literacy, data are almost entirely based on national census surveys, which often use proxy measures such as highest level of schooling reached or simple questions of self-assessment. A number of international efforts, notably the International Adult Literacy Survey (IALS) and its new round, the International Adult Literacy and Lifeskills Survey (IALL) are underway at the moment to refine and standardize methodologies and to incorporate a broader assessment of adult basic learning competencies (BLC) or life skills.

Household surveys such as the Living Standards Measurement Survey (LSMS) supported by the World Bank, which incorporate direct assessment of respondents' ability to read and write, as well as questions including the highest level of education

completed, are a relatively robust data source for estimating adult illiteracy. As with primary completion rates, it is very important to break down adult literacy indicators by gender and other population characteristics suggested in Box 1, above.

Finally, although the key outcome countries want to measure is the share of the population that is literate, it will be necessary to rely on intermediate indicators such as the number of adults per year who complete literacy training courses. And even these data are not easily available in many countries, given the large number of non-government providers of literacy training, the wide variety of training sites, content, and modalities, and, very commonly, the lack of any official body responsible for monitoring and evaluating the coverage or effectiveness of adult and youth literacy training programs. It is hoped that improving the measurement of adult literacy will be a priority for countries pursuing poverty reduction strategies.

Box 3: Intermediate Indicators for Adult Literacy

- Number of adults & youths (over age 15) per year participating in non-formal education programs
- Passing rate from adult basic education courses

2.1.4 Student learning outcomes

Developing countries are increasingly recognizing the value of standardized assessments of student learning in order to measure the how well students are learning over time, across different schools, across different regions, and to make comparisons with other countries.

However, standardized testing tends to be controversial, because no test instrument is values neutral, poorly-designed tests can create pressures for rote learning, and attaching excessive “stakes” to student or school performance can create overwhelming pressures for cheating. Outside of Latin American, national assessments are still relatively rare. Only a very limited number of developing countries have joined the OECD countries in participating in the major international assessments of literacy (IEA) and math and science skills (TIMSS), although several African countries have participated in the PASEC³, MLA⁴, and SACMEQ⁵ regional assessments of reading and mathematics and thirteen Latin American countries participated in a 1999 assessment sponsored by UNESCO/Latin America. New initiatives, such as the Program for International Student Assessment (PISA) and the Progress in Reading Literacy Study (PIRLS) may 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, however. 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 4th and 8th). 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 (public/private) and to analyze the determinants of student learning.

³ Programme d'Analyse des Systèmes Educatifs des pays de la CONFEMEN

⁴ Measuring Learning Achievement (Project) UNESCO

⁵ Southern African Consortium for Monitoring Educational Quality

Countries such as Chile, Brazil, and Uruguay are finding such national student assessment data very 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 Box 1. However, if a national assessment does not exist or until one can be developed, it is important to use other available measures, such as primary school leaving examinations or secondary school entrance examinations. Such exams have the disadvantage of coming late in the school cycle, by which time many children – especially the poorest – have already dropped out of school. Yet identifying disparities in the examination performance of children from different regions and income groups is important for education strategies aimed at the poor, and already available examination results offer a low-cost way to do so.

Box 4: Intermediate Indicators for 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

Analyzing expenditures

Comparing raw education outcomes across countries is not very meaningful if levels of expenditure are very different. The second step, therefore, is to analyze public and private expenditures, by level of 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, analyzing **expenditures across different types of inputs** (teacher salaries, books, school construction, etc.) allows for insights on the *quality* of spending.

Finally, and crucially for poverty reduction strategies, **disaggregating education spending** (as well as outcomes, as discussed earlier) by region, gender, income decile, and/or ethnic group permits further analysis of system *equity*.

2.2.1 System efficiency

Government is the major **funder** of education in all developing countries and the major **provider** of education in virtually all countries. 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.⁶ While international comparisons

⁶ 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

show that aggregate expenditure on education nearly always increases with GDP and education outcomes broadly improve with education expenditures, these correlations are by no means tight. Wide variations exist in education outcomes and spending efficiency across countries with similar income and/or education spending levels, as evident from Figure 6. Analyzing differential performance can help in identifying policies that promote better educational outcomes per unit of expenditure.

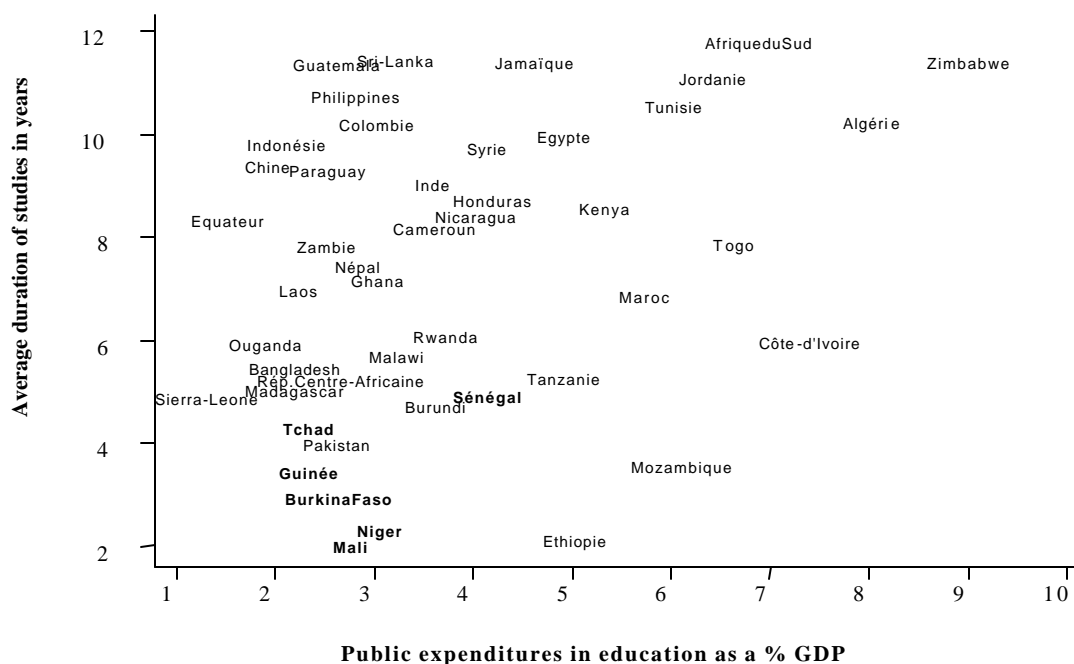


Figure 5: Public Expenditures on Education and Average Years of Schooling

The first step is to analyze expenditures, by level of education. Table 1 below 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 identify three kinds of issues:

- whether increased **aggregate spending** on education is needed (ie, overall education spending relative to GDP and unit costs are far lower than in comparable countries)
- whether there is important scope for improving **allocative efficiency** by shifting funding across the different levels of education (ie, spending shares diverge

important in HIPC countries. Comparative statistics are available in the *UNESCO Statistical Yearbook*, the World Bank's *World Development Indicators*, and public expenditure reviews for selected countries.

widely from those in comparator countries, with costs per student relatively high at some levels of the system and relatively low at other levels)

- whether **internal efficiency** is low (ie, aggregate spending and allocations across levels broadly parallel other countries but results – such as costs per graduate – are much worse), calling for different policies to improve performance at every level.

Table 1: Public Expenditures on Education

	Vietnam ⁷ (1998)	Mozambique ⁸ (1998)	Madagascar ⁹ (1999)
Aggregate spending^{a/}			
At current prices (in US\$ '000)	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\$, '000)			
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
Others	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^{d/}			
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

⁷ Source: World Bank, *Vietnam – Managing Public Resources Better, Public Expenditure Review*, 2000.

⁸ Source: World Bank, *Mozambique – Cost and Financing of Education*, 2000.

⁹ Source: World Bank, "Education and Training in Madagascar, Towards a New Policy for Growth and Poverty Reduction", Madagascar Country Status Report, 2001.

^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\$)

^d In US\$

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 NGO 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' preference for the type of education private schools provide, whether for religious training or perceptions of school security, peer effects or higher quality. In a few low-income countries, very large private sectors (often largely non-profit) have developed to accommodate demand for education when public provision has broken down. For example, in 1996 private sector enrollments at the primary education level were 89 percent in Swaziland (1997), 80 percent in Haiti and 57 percent in Uganda (1995). The share of private provision is usually larger at higher 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 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 fees for public basic education. But in some countries, the severe shortage of public resources 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. But it is important to differentiate the different types of private providers operating in country and the different forms of private financing, as these raise very different policy issues, especially for the poor.

Box 5 highlights useful information 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.

Box 5: Useful Summary Statistics on the Private Education Sector

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

2.2.2 System quality

The allocation of resources across different functional areas is also important, as it affects the characteristics of the education sector and its performance.

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. Education research points to a typical bias towards expenditures on teachers (salary inputs) over non-salary inputs, especially books and learning materials that at the margin might contribute more to student attainment and learning. Further breakdown often reveals relatively heavy expenditures on salaries of non-teaching (administrative) staff relative to teaching staff. Education expenditure analyses sometimes also show a bias toward capital spending (new school construction) rather than recurrent maintenance spending, which could preserve existing infrastructure longer. Especially in a HIPC context, where significant amounts of new funding become available for the education sector, it is important to ensure that funds used for new construction do not generate recurrent (maintenance) costs that will be under-budgeted in the future. Analysis of functional spending shares, as in the example below from Madagascar (Table 2), can lead to useful insights, particularly when compared with data from other countries.

Table 2: Public recurrent spending by level of education and function - Madagascar 1998¹⁰ (percent of total)

	Primary	Secondary		Teacher training	Vocational/Professional	Tertiary
		1 st cycle	2 nd cycle			
Wages and salaries						
System administration	12.56	12.14	10.82	4.87	10.39	1.70
School administration & support ¹¹	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
Sub-total	75.58	83.50	84.78	31.55	66.65	61.93
Other recurrent spending						
System administration	11.60	11.22	10.00	4.51	20.12	5.21
Functioning of public schools ¹²	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
Sub-total	24.42	16.50	15.22	68.45	33.35	38.07
Total recurrent spending	100.00	100.00	100.00	100.00	100.00	100.00
Share of total recurrent spending for the sub-sector	51	19	9	1	4	16
Share of students enrolled in the sub-sector	82	12	3	0,1	2	1

2.2.3 System equity

Finally, education systems typically function with large variance in the distribution of resources across different levels of the system, different regions, and 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,

¹⁰ World Bank, "Education and Training in Madagascar, Towards a New Policy for Growth and Poverty Reduction," Madagascar Country Status Report, 2001.

¹¹ Wages and salaries for administrative and pedagogical support staff assigned to public schools

¹² Materials and supplies for public school and other recurrent spending

“benefit-incidence” techniques can show which income groups benefit most from government spending. The major steps in the calculation are summarized in Box 6 (see also the **Public Spending** chapter).

Box 6: Basic Steps in Benefit-Incidence Analysis

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

As can be seen in Table 3, in many (but not all) developing countries for which data are available, the lowest quintile receives the smallest share of government expenditure.

Table 3: Distribution of Government Education Expenditure

		Share of public expenditure (%), by income quintile					
Country	Year	Quintile 1	Quintile 2	Quintile 3	Quintile 4	Quintile 5	Gap, Quintile 5-1
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: Li, Guo, Diane Steele and Paul Glewwe (1999).

Very often, the key factor underlying benefit-incidence disparities is the fact that in most countries that have not yet achieved universal basic education, the population of students reaching secondary and tertiary education is heavily skewed to upper income groups. The poor, ethnic minorities, girls, and children with disabilities typically reach these levels of the system in very small numbers. Therefore, the relatively high subsidy per student in publicly-funded schools at the secondary and tertiary levels has a significant equity impact.

The distributive pattern of private expenditure. If private education provision or household spending on education are significant in a country, it is also important to determine the distributive pattern of 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 schools, and if so, at which levels of education? Or are they financing “illegal” items, for example, payments for access to public institutions which 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 going.

Allocation by region/district/school. Some of the most important insights for education policy and poverty reduction strategies will come emerge from careful analysis of anomalies in the distribution of education resources across different regions of a country or to different schools within regions. Comparison of the public resources available to schools in different regions can be made through a simple cross-tabulation of total funding (per child in each grade) by region. Analyzing the allocation of resources across schools is often more difficult, as school-level budget data do not exist in many centralized systems. However, it is crucial. Revealing approximations may be made by analyzing the distribution of teachers across schools. In one African country, such analysis found that the number of teachers allocated to schools with equivalent student enrollments could range from 1 to 10. Inequities in resource allocation can have profound effects on school quality and education outcomes.

Examining public spending patterns in education is fundamental to help policymakers decide whether priority policy directions principally involve trying to mobilize more funding, reallocating existing funding (across education levels, types of expenditure, beneficiary groups, or public and private providers), increasing the efficiency of existing funding within current allocations, or a combination of these. Such analysis sets the stage for the evaluation and selection of the policies most appropriate in a given context.

2.3 Identifying causal factors: a 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 such expenditure analysis often falls short of producing a detailed understanding of the key constraints to better performance in a given education system. Thus, a third diagnostic step is to work back from the observed outcomes through a **decision tree** to try to identify 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 especially good at disentangling socio-economic or demand-side factors which influence education outcomes (e.g., individual, household and community level factors) from policy and institutional characteristics of the education sector itself.

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 throw up many issues in the allocation and/or efficient use of resources. But more precise understanding is possible if “top-down” expenditure analysis is complemented and cross-checked with an detailed analysis of observed characteristics of the education system working from the “bottom-up”. The education “decision tree” pictured below in Figure 2 helps to do this. The growing number of countries that have used this education decision tree have found it to be a powerful diagnostic tool and helpful for policy formulation. A full, step-by-step guide to using the decision tree pictured in Figure 7 is available in Technical Note III. The following sections provide a brief overview of the approach.

The decision tree starts with the question: is the share of the age group graduating from basic education 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 work through whether the underlying reason is: low intake into grade 1; high dropout during the basic cycle; or, as in many countries, both. If low intake into grade 1 is a significant part of the problem, analyzing the composition of the **excluded** population, using the LSMS-type data discussed earlier, is the first priority.

The next step is to probe whether the underlying reason for low enrollment in the first year of basic education is: **low demand** (ie, there are available school places that children are not filling) or **inadequate supply** (school places are not available in adequate numbers, and/or what is available is of very poor quality).

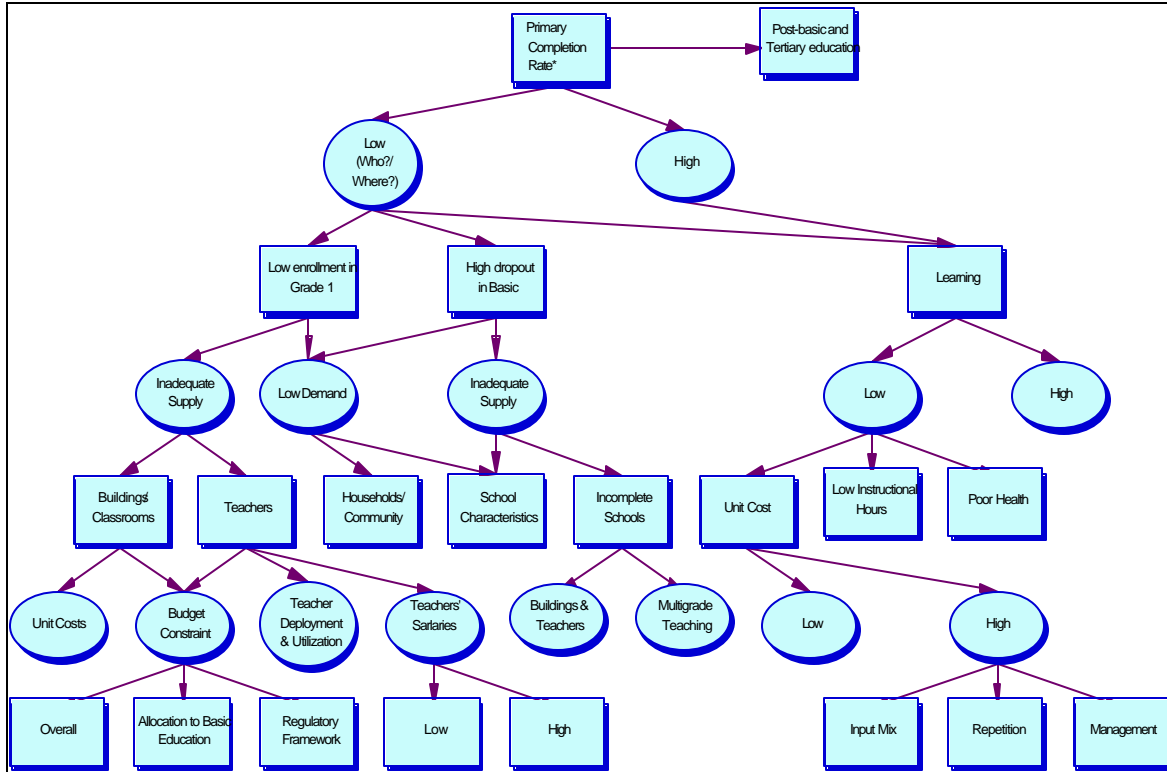


Figure 6: Decision Tree for Analyzing Education Outcomes

2.3.1 Analyzing supply constraints

If the basic issue is inadequate supply, the left-most column of the decision tree guides an analysis of the two major sources of supply constraints:

- **shortage of physical infrastructure** – school buildings and classrooms 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 three kilometers from school.

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 or social fund projects in the same country have achieved much lower unit construction costs using simpler or more innovative building standards, greater reliance on local materials and community involvement.

If, on the other hand, construction costs are reasonable, easing infrastructure supply constraints will require **additional resources** to be mobilized. In this case, the decision tree analysis links back to the analysis of public and private expenditures, and the 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.

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 first-level indicator is the national pupil-teacher ratio, found often in EMIS (Education Management Information System) and/or the annual school survey.

However, it is relatively common to find teacher supply adequate overall, but with shortages in some regions and schools and excess teachers (and very low student-teacher ratios) in other regions and schools. Many countries are unable to attract teachers, and especially female teachers, to work in remote rural areas. Another problem occurs when large numbers of teachers are assigned to do administrative work and fill other non-teaching positions. If the overall number of teachers is inadequate, teacher shortages in poor and rural areas are usually even worse, as these are typically the last regions where basic education access is extended.

The inability of the education system to hire an adequate number of teachers is, especially in African countries, often linked to a level of **teachers' salaries** in the country that is “too high,” making it impossible to pay enough teachers from the budget to satisfy overall needs. Whether average teachers' salaries in the public sector are too high, too low, or broadly appropriate given market forces, is not a simple question to answer. However, when teacher salaries average 6-7 times per capita income, as in francophone African countries (compared with 2.5 times per capita income in Southeast Asian countries) there is a clear issue¹³. Criteria to guide the assessment are suggested in Box 7.

¹³ Alain Mingat and Bruno Suchaut, 2000.

Box 7: Possible Criteria to Evaluate the Level of Teachers' Pay

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

2.3.2 Analyzing low demand

The central column 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 given demands in the labor market, cultural expectations, household income, the direct costs (uniforms, books, transportation, miscellaneous fees) and indirect costs (demand for children's labor) of schooling, 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 lack of transportation and cultural taboos precluding parents from "showing" disabled children outside of the home can be an additional constraint to their school attendance. On the other hand, in some countries disabled children are more likely to be sent to school, because the indirect costs of their schooling are lower if, for example, they cannot provide agricultural labor, and the expected benefits (relative to limited alternatives) are high. Enrollment patterns of children with disabilities must be analyzed in the country context.

Variations in demand can be substantial across ethnic, socially and physically disadvantaged groups and across provinces, districts and communities, and perhaps above all, by gender. Parents unable to afford the direct costs of keeping all of their children in basic education often choose to keep their daughters at home to perform household chores, or because of security risks, or because educating sons will bring greater benefits to the immediate family than educating 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".¹⁴

Finally, research indicates that important interactions exist between supply and demand factors, related to **actual or perceived quality**. Schools may be physically available but parents still may not enroll children because the schools lack electricity or toilets, or

¹⁴ Jere Berhman, "Household Income and Child Schooling in Vietnam", *World Bank Economic Review* 13, no. 2, p. 211.

because of teachers' behaviors or perceived effectiveness, a lack of books and materials in the school, the language of instruction used, or the rigidity of the school calendar, etc.

High dropout rates in basic education. Low primary completion may also reflect high dropout. Students may drop out because of the fact or perception that the quality of teaching and learning at school is low or 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 following section) which shifts the cost-benefit ratio. Dropout can also stem from inappropriate teacher behavior. Social assessments can help in analyzing these factors. Key questions to investigate are parents' and community perceptions of the relevance and accessibility of the curriculum (especially for children from poor families), possible conflicts between the school calendar and needs for seasonal work, the level of teacher qualifications, teacher behavior, and the availability of books and supplies.

High dropout in areas with **incomplete schools** is 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, however, is expensive, especially in areas of low population density. Countries seeking more "bang for the buck" in education need to consider broader options, including **multigrade schools** (i.e., one teacher teaching more than one grade), **double-shift schools**, school transport, or distance learning, all of which are discussed further in Part III.

2.3.3 Analyzing low learning achievement

The rightmost column of the decision tree focuses on 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 tests that can be given on a regular cycle to a sample of students is a priority.

If national assessments or national examination data are available and lead to the conclusion that student learning is acceptable on average, it is still important to analyze the variance underlying average student performance, and especially and correlations with family income, gender, ethnicity, or disability (Box 1).

However, learning outcomes in most low-income countries – even where nearly all children complete basic education – will probably be assessed as unsatisfactory on average. The third and 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 include irrelevant, poorly articulated, overloaded curricula, inadequate teaching and learning materials, inadequate instructional time, and unsuitable learning environments. Processes include poor teaching quality, inadequate utilization of curricula and instructional materials, low teacher motivation, inappropriate learning processes, unsuitable language of instruction, inappropriate student assessment and examination processes, poor school

management and instructional leadership, poor curricula implementation and monitoring, and home practices that are not supportive of effective schooling.

At this point the decision tree analysis again links back to the earlier 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 in order for learning outcomes to be raised. Analysis is still required, however, to determine the ideal mix of inputs as well as the best utilization of each of these inputs to improve learning outcomes.

Very 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 which does not support learning; (2) high repetition rates; and (3) inefficient management. The earlier analysis of **the equity of spending** must be recalled, however. 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 (e.g., 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 is a priority.

As noted earlier, one cause of high unit costs together with low learning outcomes is that the **mix of inputs** (or functional allocation of spending) is sub-optimal 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 non-salary pedagogical inputs such as textbooks and other instructional materials.

A second major cause of system inefficiency is **repetition**. Where many children are held back, or choose to repeat grades, the cost per basic education graduate is higher and more of all inputs (teachers' time, classroom utilization, instructional materials, etc.) are used up. Repetition clogs an education system, retarding the flow of pupils and making it more difficult and more expensive to bring children currently not enrolled into the system. Repetition rates can be a key intermediate indicator to monitor in countries seeking to increase education system efficiency.

The final possible cause 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 and not 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 teachers' salaries. High spending on textbooks without making sure that these are distributed on a timely basis and utilized 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. Studies like these show the importance of management in education and the scope for improvements in system performance without additional resources.

Student factors: poor health as a cause of low learning achievement. In many poor countries, and especially in the poorest regions of the country, malnutrition and disease

limit students' attendance and capacity for learning in school. Where malnutrition is prevalent, many children are physically stunted (below normal in height) by the time they enter school and, indeed, 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, discussed in Part III, have a high payoff in terms of student attendance in learning. Simple training to sensitize teachers and help them provide the extra assistance and encouragement that vulnerable children need (orphans, children with disabilities) can also be relatively low cost, but have a high return in terms of these children's academic progress.

Part III: 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. Part III focuses on moving from diagnosis to policy and program design. The first section of Part III looks at the key policy levers available to the Ministry of Education to improve outcomes for the poor in education. The second section focuses on the challenge of eradicating adult illiteracy and lessons from international experience with the design and delivery of cost-effective programs. The final section considers the key policies in other sectors that have important influence on education outcomes of the poor – macroeconomic and fiscal policies, and the delivery of other social services, notably ECD interventions, and health and nutrition programs.

3.1 Education policies to improve outcomes for the poor

Table 4 (next page) 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 county to country, and the diagnostic process outlined in Part II is designed precisely to help countries analyze which factors are most urgent in their context. But virtually all countries face some degree of challenge in all three areas:

- expanding the supply of schooling to ensure basic education access to all children
- 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. Sections 3.1.1.-3.1.3 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 in section 3.1.4.

Table 4: Key Education Policy Options

Area of Concern	Policy Choices	Means
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 quality pre-service training (i.e.: shorter 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 • Multi-grade 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 (i.e.: accreditation system and collection of basic statistics) • Grants to cost-effective non-public 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 goal 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 (e.g. radio education)
	Tighter accountability mechanisms	<ul style="list-style-type: none"> • Simple school monitoring and reporting system (incl. private schools) • Assessment of student learning outcomes • Stakeholders empowered in school affairs
	Institutional strengthening	<ul style="list-style-type: none"> • Reinforced management functions (i.e.: planning, budgeting, staffing) • Greater school autonomy
Stimulate Demand	Promote education of girls	<ul style="list-style-type: none"> • Targeted stipends for girls • Labor-saving technologies, water points, and child care facilities at school to ease girls' HH 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 "safety net" stipends to poor HH, esp. AIDS orphans

<p>Make schooling attractive to parents and communities</p>	<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 • Non-formal education programs for youths and adults • Community libraries (eventually internet centers)
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3.1.1 Expanding supply

Increasing access to education is the most obvious challenge faced by HIPC and other low income countries, in some of which as many as 50% 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 today. The countries that have made the most impressive progress towards EFA over the past decade are those (Bangladesh, India, China, Uganda, and Guinea) that 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, with more careful targeting of school expansion to communities lacking access
- Strategies such as double-shift schools in urban areas and multi-grade schooling in rural areas to use existing school infrastructure more efficiently
- Incentives for the expansion of quality private (for-profit and NGO) providers
- 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 as much as 50% through more modest (but still safe and adequate) design standards, lower cost local construction materials and mobilizing community labor to help build schools. These directions are essential for EFA progress, and 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 over the coming decade. A demographic model is available to assist countries in projecting the impacts of HIV/AIDS on student numbers as well as teacher supply.

Paying attention to the needs of children with disabilities is also important. Sometimes simple changes to school building designs can ensure that these are accessible to children with limited mobility. Increasing information about the extent of children with physical and learning disabilities in developing countries is pointing up several troubling facts. First, as much as 5% 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 a society. And 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, Lao PDR 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 basic education access 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. Tragically complicating this is the loss of teachers to HIV/AIDS mortality and/or their migration to more attractive employment available as a result of AIDS mortality in other sectors, factors which are already straining the capacity of many African countries to produce new teachers.

A second issue is the difficulty of deploying teachers to rural areas, where school systems need most to expand. It is difficult to attract highly-educated, usually urban, teachers to assignments in rural areas. Finally, relatively high average salaries among teachers with higher-level degrees and full civil service status may make the costs of expanding the teaching force prohibitive. In these contexts, it is crucial to develop: strategies for *lowering the costs of teacher preparation* and strategies for *recruiting a new teacher cadre*.

To speed up, and lower the costs of, teacher preparation, countries are developing new “fast track” standards (shortened formal training with more emphasis on hands-on practice in classrooms) and 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% or more¹⁵. Such programs could have significant potential for countries seeking more rapid training and certification of the teaching force.

Countries ranging from Senegal, Burkina and Benin to Mexico, Uruguay and India have found that establishing a *new teacher cadre* is another important strategy, as it can not only allow more rapid teacher recruitment, but also easier deployment in rural areas and expanded local language instruction. These teachers, often recruited from the local community in rural areas and possessing only secondary-level education, are offered special training and more flexible incentives than the traditional teaching force. Although teachers in these new cadres 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. Countries pursuing this route, however, rarely face a shortage of candidates for these cadres. The long-term political viability of this approach may pose issues, however (see section 4.3).

➤ ***Better use of existing infrastructure***

Multigrade schooling. Reaching children in the remotest hamlets where population density is low and unit costs correspondingly high is a challenge for all school systems.

¹⁵ Hillary Perraton and Michael Potashnik, “Teacher Education at a Distance”, Education and Technology Series 2(2), World Bank, 1997.

Colombia, Guatemala, Burkina Faso, Zambia, the Philippines and other countries have found multigrade schooling (one teacher teaching more than one grade in a single classroom) to be the most cost-effective way of making optimal use of classroom facilities and providing complete primary schooling in sparsely populated areas. Multigrade teaching works best where teachers are trained to manage a classroom of children spanning 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 opposite problem: shortages of classrooms in densely populated areas. In urban areas, schools operating two shifts per day (sometimes with a third, evening, shift for older students) can allow 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 and learning is not impaired. 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. Incentives such as housing or other allowances may be needed to attract teachers to less desirable areas. Maintaining a reasonable class size can also be a powerful strategy for education efficiency. Korea and Singapore still maintain an average class size above 40 in basic education in order to devote resources to other inputs (books, materials, computers, etc) that they believe produce more cost-effective impact on student learning outcomes. Education research across a large range of countries supports this; where average class size is below 40, lowering it further should not be a priority use of resources in low income countries.

➤ ***Expanding private provision***

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

3.1.2 Improving quality

Education systems across the world are grappling with the challenge of improving quality, no matter how well-resourced they are. For countries trying to expand access rapidly, the challenge of simultaneously improving school quality is even more acute. However, research shows unequivocally that expanding access without minimally adequate quality is a formula for low efficiency: children do not learn, grade repetition is high and large numbers of students dropout before completing basic education. School

quality is not a luxury that countries can only afford to develop after universal coverage has been achieved; the two must go hand in hand.

The key, as in expanding supply, is to find low cost, but effective, strategies for:

- Improving teaching quality
- Improving the quality and availability of instructional materials
- Increasing school and system accountability and
- Strengthening 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: i) teacher pre-service training in many countries is of low quality and imparts only traditional "frontal" teaching methods, and ii) classroom teachers enjoy a degree of isolation from scrutiny and performance feedback that leaves wide latitude for variations in behavior and motivation. Revitalizing teacher pre-service training is important, in part for attracting high caliber individuals into the profession, but it takes time for its impact to be felt throughout the system. More immediate impact on teachers' skills and motivation is urgently needed in many low-income countries.

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 over 50 children. Finally, teachers need training to help them deal sensitively with gender differences and the special learning and emotional needs of children who have lost their parents to HIV/AIDS, suffer from disabilities, etc.

Ongoing teacher development is the key to such improvements. Countries are beginning to devise relatively simple and low-cost strategies for teacher development that are having direct impact on teachers' skills and practice. *Microcentros* in Chile and Colombia bring small groups of rural teachers together on a monthly basis to share lesson plans, assess student work, and help each other improve 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 issue 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 2-3 years in their mother tongue before transitioning to the language of wider communication have higher academic performance than peers of similar linguistic and socio-economic background who have been taught only in the language of wider communication. 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”. Extending the school day is a very costly option and likely to be prohibitive for many countries, especially where double-shifting is necessary to achieve universal coverage. More practical steps which can go a long way 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 really is far shorter than the OECD average of 1000 hours per year, consideration should be given to extending the school year up to international norms, but with no salary increment.

➤ ***Quality instructional materials***

The second key factor in education quality is the availability of books and other learning materials. Research has demonstrated the cost-effective impact of an “enriched classroom environment” on student learning. The reality in many low income countries, however, is an absolute shortage of reading books, maps, manipulatives and other materials, and textbooks that are often out-of-date, irrelevant, gender insensitive and available in limited numbers, if at all. Equally critical are the many cases in which available 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 textbook investments should be avoided. However, low-cost mimeographed worksheets, stories and other materials may be substituted very effectively. Making instructional materials out of locally available resources (beans, leaves, etc) and giving small grants to teachers to develop their own teaching-learning materials are alternative strategies used with success in Colombia and India.

Educational technology, while still limited in most low-income countries, has been demonstrated to increase student learning cost-efficiently. 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 “leap frog” 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 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 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***

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 developed 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 is for education systems to develop better information on the comparative performance of schools, districts and provinces and use this both to reward good performance and hold lower-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, discussed further in the following section.

Education management information systems (EMIS) do not have to be highly sophisticated and expensive. They can start modestly. The keys are timely collection of school level data and developing appropriate comparison groups for schools and districts, based on student socio-economic factors. If schools’ performance on enrollment measures such as the primary completion rate, dropout, and repetition rates is compared to other schools with similar student populations, it is fair to hold schools accountable and to expect improvement plans from low performers. All EMIS data should be gender-disaggregated.

Equally if not more important is tracking student learning, the most important outcome of an education system. It is not simple to put in place a standardized system of student assessment, but it is a myth that these need to be extensive, elaborate and prohibitively costly. Countries can start with small, sample-based assessments in only two key learning areas (math and literacy), administered for only one or two grade levels, and repeated only every two or three years, and 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***

Finally, the institutional capacity for sound planning, budgeting, staffing and performance management are at the core of a quality education system – essential for good policymaking and for eliminating corruption. For many countries, this will mean restaffing the Ministry of Education with a smaller number of more technically trained and results-oriented staff. It also means attention to the role, selection criteria and preparation and on-going development of school heads. Research shows the crucial

impact which school leaders can have 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 Brazil's state of Ceara are shifting district offices from an "inspection" orientation to a "school support" orientation, staffing them with math and literacy specialist teachers, 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. When 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 and 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, direct accountability pressures on school (and district) personnel are generated. Researchers in Nicaragua have confirmed that "autonomous" schools (where parents have a majority voice on the school-level council) have lower teacher absenteeism than traditional schools – an important contribution to school quality.¹⁶

3.1.3 Stimulating demand and relieving household constraints

The third broad constraint to universal primary completion in HIPC and other low income countries are the demand-side issues that cause a large number of students to drop out or never enroll in school, even where schools 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, parental and community attitudes undervaluing education (especially for girls) or household poverty making school attendance unaffordable are the dominant constraints. 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 be more responsive to the needs and values of their communities in order to reduce student dropout, such as adapting the school calendar to the agricultural production calendar.

¹⁶ Elizabeth King and Berk Ozler, "What's Decentralization Got to Do with Learning? The case of Nicaragua", World Bank, November 2000.

➤ **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. While there is no single strategy for getting more girls in school, 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, 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 very 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' enrollments 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 child care 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. Reduced distance to school tends to have a greater impact on girls' enrollments than boys', as parents are often more reluctant to let daughters walk long distances to school. The provision of separate latrines for girls also has significant impact on girls' attendance, particularly for older girls. At the secondary level, there is some evidence in countries such as Pakistan and Yemen that separate secondary schools for girls can promote girls' enrollments. However, the cost-effectiveness of these relatively expensive approaches must be weighed in relation to other alternatives. At the basic education level, in most countries, same sex schools are not necessary to get more girls in school.

Hiring more female teachers and female education administrators. The absence of female teachers in many areas is a barrier to girls' enrollments, as parents in some cultures feel uncomfortable allowing their daughters, especially adolescents, to be taught by male teachers. Hiring more female teachers, and especially 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 girls' attendance and persistence rates. However, it is very important that new female teachers, especially in rural areas, not be marginalized when it comes to in-service training. Special programs which target rural and female teachers in terms of teaching skills improvement have 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 to “see” constraints to getting more girls into school. Female teachers, especially in rural areas, feel more comfortable dealing with female education managers. Female education leaders 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 discussed earlier, participatory school councils and village education committees which 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 reduced early dropout of girls. Women’s literacy and empowerment programs (see section 3.2) also have very significant effects on daughters’ school enrollment rates and retention.

Multi-faceted strategies. While all of the above approaches have demonstrated results, the countries making the most progress have used social assessments, surveys or other careful studies to zero in on the most important constraints and issues in their context and then to tailor a strategy “package” to that context. Some of the most successful countries – India, Bangladesh, Malawi, Uganda and Bolivia – have brought millions of girls into school over the past decade years using combinations of the above measures. The state of Uttar Pradesh in India, for example, raised the basic education (gross) enrollment rate for girls from 50% to 98% in an eight year period and lowered girls’ dropout rate from 60% to 31%. The World Bank has developed a research base on “what works” to improve girls’ education. Country experience confirms strongly that addressing multiple concerns related to girls’ education simultaneously in a coherent strategy can produce significant gains in a relatively few years.

➤ ***Ensure School Affordability for Poor Families and Orphans***

Fees for school tuition, uniforms, textbooks and stationery in many countries pose a significant burden for poor families. Countries which have eliminated tuition fees, such as Uganda and Botswana, have registered large increases in basic education enrollments. But even where tuition is not charged, 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 for HIPC and other low income countries 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 (foregone earnings and the value of contributions to household production) costs of schooling for poor families 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 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, distribution of such family assistance through the school system and making it conditional on continued school attendance, may be the most effective way to promote both social assistance and educational goals.

Such programs may also be temporarily launched to protect schooling participation during recessions or financial crises. Indonesia's targeted school grant program in the aftermath of the financial crisis succeeded in avoiding a projected decline in school attendance. The costs of these programs can be relatively high, but the equity impacts, if they are carefully targeted, are substantial.

➤ ***Adapt schools to students' and communities' needs***

Finally, schools' failure to adapt to the needs of local communities can lower demand. Schools' flexibility in matching the school calendar to the local agricultural cycle, altering the daily timetable to enable children (esp. 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 (ranging from ECD, adult basic education classes at night, youth programs, a community library) can greatly increase schools' attractiveness to the community and parents' support.

Disaggregated analysis of enrollment data will help school systems to identify those communities where demand constraints appear most significant. Social assessments can be helpful in analyzing underlying factors. But it should be noted that actions discussed in Section 3.1.2 to increase communities' voice in school governance may provide the most effective way to ensure that schools respond to the needs and values of local stakeholders.

3.1.4 Post-basic and tertiary education

Secondary and higher education provide people with the skills for formal employment and secure pathways out of poverty. They provide nations with critical high level skills and knowledge needed for development, including trained professionals such as teachers, health workers, scientists and technicians, public and private sector managers, and researchers. Even very poor and very small countries need a minimum science and technology capacity 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 fifty attends tertiary education. The challenge for many governments is promoting balanced development of the entire education system while pursuing rapid achievement of basic education for all, within the context of very 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 for basic education. The role of private (ie, household) financing is particularly important in post-basic education, because of the high private returns and because participation at these levels is dominated by the non-poor. Especially at the tertiary level, possibilities exist for 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 revenues mobilized through cost recovery must stay with the institutions that collect them and translate into visible improvements in education quality, or it becomes 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 (e.g., scholarships, income-contingent student loans, work-study, fee exemptions) to enable poor students to enroll in post-basic education

At the upper secondary level, a major challenge governments face is how much school-based vocational education and training (VET) to provide. A key consideration 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. At the other extreme, many 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 basic schooling is high, significant private benefits (i.e., 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 heavily on an upper secondary degree, or higher. Investigators should examine whether the availability 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, it points to the need for policies to help poor students enroll – e.g., scholarships, fee exemptions, and boarding opportunities.

3.2 Eliminating adult illiteracy

Achieving – and sustaining -- universal primary education completion is crucial for the progressive eradication of adult illiteracy. However, for high illiteracy countries, non-formal education programs aimed at adults and out-of-school youths can be an important complement to the formal education system until universal primary completion is achieved. Effective adult basic education programs contribute directly and powerfully to poverty reduction. By definition, they target the poor, especially women and girls. They deliver crucial basic literacy and numeracy skills that equip disadvantaged individuals to 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. Responding to demand for adult basic education in communities where many parents are illiterate has been shown 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 the civil society – non-government (NGO) and community-based (CBO) organizations. The international track record shows that most programs succeed in retaining the clear majority of those who initially enroll and bring most learners up to a modest level of literacy. But there is a wide variety in program types, sites, and operators. This is appropriate given evaluation evidence showing that effective programs closely reflect the needs of the target population. For example, programs very often combine basic literacy and numeracy training with other skills (e.g., basic household or business accounting) and income-generating activities (such as textile weaving or purchasing and running a grain mill), especially for women's cooperatives. This diversity also points, however, to the importance of consistent evaluation of programs' costs and effectiveness.

Compared to full-time schooling for children, adult basic education will claim much less time each week. The finance required is overwhelmingly for 'recurrent' investment in human resources: the training and remuneration of instructors/facilitators (volunteer teachers can bring unit costs down but all-volunteer teaching forces are usually not sustainable long-term or sufficient if programs go to scale) and learning materials. Rarely is there a case for constructing separate facilities. Costs per learner range from roughly \$5 to \$40 per year, depending on initial development costs and program scale, but they are invariably lower than the per-student costs of formal basic education.

International experience points to the following recommendations for the design and delivery of cost-effective adult basic education:

- Create a framework of lifelong learning that specifically links adult/youth basic education into the main system of accreditation and provides pathways for “graduates” to pursue further education
- Keep participation in adult basic education voluntary

- Since adults bear high opportunity costs just to participate in classes and they are invariably low-income individuals, adult basic education should in principle be free of charge. If the education and training provided is linked to income-generating activities, however, some cost recovery may be explored.
- Diversify approaches to respond to needs. Use local languages initially. Promote a twin-track approach of: a) building literacy into existing interests, like agricultural and health extension, cooperative groups, or micro-enterprises and b) offering focused literacy and numeracy training to those who are interested mainly in these skills. However, use training opportunities to disseminate important information (health awareness, etc) and always link literacy and numeracy skills concretely to life, work, community and social issues, and development programs.
- Build partnerships between the government and civil society. Identify and capitalize on existing institutions and sources of social energy to maximize cooperation between governments (local and central, and all departments which deal with poorer sections of the people), voluntary organizations (local, national and international), community organizations and private sectors.
- Include prevention of HIV and caring for AIDS victims as part of the curriculum, where necessary and appropriate.
- Ensure that the facilitators receive adequate technical, moral and material support, such as assistance from supervisors and professional networks, and are sufficiently accountable to their learners to sustain their programs. Recruit local facilitators. Short term contracts are usually appropriate.
- Reinforce connections between the education of children, especially those from very poor families, and the education of their parents
- Actively promote a literate environment to ensure that learners develop towards lifelong learning. Explore use of ICT (Information Communication Technologies), including radio

The preparation of a PRSP offers an important opportunity for countries to reconsider the relationship between the formal schooling system and non-formal education. A clear policy framework can help governmental and non-governmental providers of adult basic education determine target populations, ensure that curricula incorporate key health and other messages, efficiently deploy teacher/ 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 developing a meaningful assessment tool for tracking progress in eliminating adult illiteracy.

3.3 Other key policies

3.3.1 Macroeconomic and fiscal policies

Macroeconomic and fiscal policies determine the rate, volatility, and labor-intensity of economic growth in a country and thus are crucial factors in poverty reduction strategies. Such policies also have profound impact on the education system. First, the overall level of spending on education in virtually all countries is very largely determined by public expenditure decisions – the aggregate level of government revenues mobilized and the priority given to the education sector. Second, and perhaps even more importantly, the rate and pattern of economic growth drive the returns to education – the increased income individuals can expect, and the aggregate productivity and growth gains a country can expect, from investments in education. A significant body of research demonstrates that parents' and students' educational choices are highly sensitive to the returns to different levels and types of schooling.

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 is observed, reflecting a huge cost to society from inefficient education investments. If education system fails to keep pace, acute skills shortages develop in key sectors. If the alignment between what is taught in schools and skills demanded in the economy is poor, students drop out of school rather than waste time in a low-return pursuit.

The clearest messages for policy come from a growing body of research pointing to the importance of:

- macroeconomic stability and labor-demanding growth strategies for education returns
- broad-based basic education for all (rather than heavily specialized or vocational education) for faster diffusion of information and innovation in the economy, productivity gains and competitiveness
- creating a framework for *lifelong learning* by providing accreditation for a wide range of formal education and non-formal training modalities (enterprise-based, free-standing institutes, etc) that allows for flexible paths between formal and non-formal training institutions across an individual's lifetime in response to changing labor market conditions; and
- a wide variety of communication channels and collaborative arrangements between the education system and private industry, to permit on-going realignment of education supply with evolving demands for skills and knowledge.

3.3.2 Early child development programs (ECD).

Early child development interventions are an effective and a powerful lever for accelerating universal basic education. Research shows clearly that 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, born poor and deprived of the basic child care provisions during their first years of life are set on a trajectory for lower school achievement 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, emotional and intellectual development can reduce that gap so that poor children enter school on a more equal footing to their more affluent peers.

Studies of international experience show that ECD interventions and day care programs have the following benefits:

- Improved nutrition and health
- Higher intelligence scores
- Higher school enrollment and attainment
- Less grade repetition
- Fewer dropouts
- Increased female labor force participation

While no single approach for providing early childhood care and education can be promoted universally, there is mounting evidence that low-cost non-formal interventions, particularly those targeted to disadvantaged children, can yield measurable benefits. Non-formal programs, often operated out of a home in the community with training and resources provided to a mother from the neighborhood, can be cost-effective alternatives to formal preschool programs, especially if the programs are designed to integrate health, nutrition, and early childhood development interventions simultaneously. Non-formal early childhood programs are flexible in format and much less expensive to administer than formal kindergarten. By improving mothers' parenting skills, they benefit younger siblings as well as the children targeted. Finally, low-cost, non-formal ECD programs typically extend access to low-income children who would otherwise be missed and for whom, research shows, the potential benefits are greatest.

3.3.3 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 cost-effective use of its health dollars¹⁷. For as little cost as \$0.30 per child per year, school health programs can dramatically reduce the number of days of schooling children miss due to illness and ensure that they are sufficiently nourished to be able to focus on learning. School health programs are an unbeatable way of protecting the impact of education spending. Their cost-effectiveness in part comes from using the school network to screen children and distribute interventions. If Ministries of Education and Health cooperate on the design, teacher training, and delivery of these programs, the benefits for both sectors are tremendous. As countries progress towards universal basic education, school health programs become increasingly important, as some of the children who most need health and nutritional support – the girls, the rural poor, children with disabilities – for the first time have access to schools.

A core group of simple and familiar interventions developed by WHO (World Health Organization), UNICEF (United Nations Children's Fund), UNESCO and the World Bank

¹⁷ 1993 World Development Report: Investing in Health, World Bank.

and known as **FRESH (Focusing Resources on Effective School Health)** approach, when supported by effective inter-sectoral and community partnerships, are feasible to implement even in the poorest schools, and 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* to provide a healthy learning environment, reinforce hygienic behaviors, and assure privacy, to promote participation in education of adolescent girls.
- *Skills-based approach to health, hygiene, and nutrition education* that focuses upon the development of knowledge, attitudes, values, and life skills needed to establish lifelong healthy practices and to reduce the vulnerability of youths and teachers to HIV/AIDS.
- *School-based health and nutrition services* that are simple, safe and familiar, and address problems that are prevalent and recognized as important within the community, including vision screening, micronutrient supplementation, and deworming.

Key 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, and especially PTAs (Parent Teacher Association), and monitoring and evaluation, to ensure that children's health status and school performance improves. Much more can be done, but if schools implement these four priority interventions they can produce significant immediate benefits and create a foundation for future expansion.

Part IV: Identifying Feasible Actions and Setting Targets

The policy challenges facing HIPC and other low-income countries in education are numerous and by and large long-term in nature. Countries also face major constraints on resources and capacity. Yet, HIPC countries especially are under time pressure to show measurable progress. Part IV briefly considers the issues involved in developing feasible reform programs, gauging the pace at which progress is possible, and setting achievable targets. Section 4.1 focuses on setting priorities. Section 4.2 considers the time frame and institutional capacity requirements for different policies. Section 4.3 looks at political stakes, and the final section, 4.4, provides guidance on monitoring and evaluating progress.

4.1 Identifying priority reforms

Analysts working through the framework presented in this chapter by this point will have:

- identified through diagnosis the priority issues affecting education outcomes for the poor in their country context (part II) – broadly, inadequate supply; low quality; or constrained household demand; and

- considered alternative policies that would have the strongest impact on these issues, as discussed in part III.

However, developing a reform agenda requires three important additional steps:

- analyzing costs, tradeoffs and complementarities between policies;
- analyzing the time and institutional capacity required for policies to be implemented and produce results; and
- understanding the political payoffs/stakes to different policies in the country context.

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. All of the policies summarized in Table 4 are backed by some degree of research or cross-country experience as to their *effectiveness*. Unfortunately, however, relatively few are backed by clearcut evidence of *cost-effectiveness* to facilitate choices among alternative policies. Perhaps the four best-researched exceptions, which have demonstrated benefits (positive impact on student learning and attainment) significantly exceeding costs in a wide range of country settings are: provision of books and learning materials (about \$1.00 per student/per year); school health and nutrition programs (\$0.30 per student/per year); double-shift schools; multi-grade schooling in rural areas; and community pre-school services for low-income children. Technical Note IV provides a summary of the most recent research on education cost-effectiveness in developing countries.

In the absence of full cost-effectiveness research, the majority of the policy options discussed in this chapter are essentially lower-cost approaches to things school systems are already doing: for example, community-based construction instead of formal contracting, at 50% lower unit costs; simple teacher networks instead of residential in-service training programs; local teaching materials instead of imported books; double-shift instead of single-shift schooling where feasible, etc. Other policies, such as introducing mother-tongue instruction or stipends for girls, may require increased investment but can be expected to generate savings from lowered student repetition and higher student learning that more than offset the costs.¹⁸ A third subset of the policies recommended are “close to no-cost” strategies for improving school effectiveness that are often overlooked: assigning the best teachers to the first grade; enforcing the official school calendar; distributing books and materials by the start of the school year, etc. These are summarized in Box 8.

¹⁸ The international cost-effectiveness research on these policies is less extensive than for the policies mentioned in the previous paragraph, however.

Box 8: Low or no cost interventions with impact on school quality

- Enforce official length of school year and school week
- Assign best teachers to first grade
- Establish a policy not to switch classroom teachers during school year
- Extend length of 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” (grades 1 and 2 together; etc., with no repetition within cycles)

Especially where there is a need to expand access, overall education spending will increase, of course. One recent study estimated that achieving universal primary enrollment by the year 2015 in 6 HIPC countries in Sub-Saharan Africa would require, at a minimum, a 30-65% increase in annual spending on education between now and 2015.¹⁹ In the absence of actions to lower the unit costs of schooling delivery in these countries, the incremental financing requirement would be substantially higher. The policy recommendations in this chapter focus on strategies for lowering the **unit costs** of service delivery, while maintaining or increasing quality. India’s DPEP and Bangladesh’s BRAC (Bangladesh Rural Advancement Committee) program over the past decade provide two good examples of this; both have simultaneously expanded education access (targeted to girls and the poor) and increased 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 non-formal 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 life-span available to adults during which to reap the benefits makes adult basic education a lower return investment than schooling for children. Ministries of Education may 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.

Yet the evidence of significant non-income benefits and externalities (better health, nutrition and educational attainment among children of literate adults) from these investments plus the potential for relatively immediate impact on family income generation has led this chapter to conclude that in the context of a poverty reduction strategy, adult and youth literacy programs are a justified priority for countries with very low literacy rates. One strategy for Ministries of Education to minimize tradeoffs is to work with other providers – especially NGOs or other ministries – to “build in” effective literacy and numeracy training to skills training programs or other adult outreach programs developed and delivered in other sectors, often financed in the context of other development projects.

¹⁹ Alain Mingat, “Note préliminaire sur les besoins en financements publics dans la perspective de la scolarisation primaire universelle en 2015 dans les pays du Sahel”, World Bank, November 2000.

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 is to develop the **minimum** policy package comprehensive enough to address 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 key parts of a reform package can undermine its impact. For example, the policy decision to eliminate school fees may be easily taken and quickly announced. But unless the school system is prepared with adequate teachers and learning materials to absorb the swell in enrollments (in Uganda in 1998, enrollments doubled to 2 million students in a single year), the benefits are questionable. Similarly, an investment in modernization of the curriculum can be completely undermined if teachers are not retrained to teach it, and books, materials, and student learning assessments are not revised to reflect it. Yet assuring this alignment greatly increases the scope, costs, implementation complexity, and time-frame of a reform.

There is no simple answer to this issue. Much judgment is called for in focusing the policy agenda on the 1-2 key priorities most relevant in a particular country context and then working to ensure that all necessary complementary components and actions are aligned. Strategies for managing policy alignment are discussed in the next section

4.2 Analyzing the time frame and institutional capacity for policies to work

The relatively short-term perspective of PRSP and HIPC-related external 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. A key part of PRSP preparation, in order to develop reform strategies and especially to set feasible targets, is to understand the time frame for implementation of key policies and the rate at which progress can be expected.

Analyzing the time frame for policies to work. In general, changes in the regulatory framework (permitting local recruitment of a new teacher cadre, adopting community-based school construction, mandating local language instruction, extending the school year, 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 relatively quickly enacted by legislatures or promulgated by Ministries of Education. The decision-making process for these kinds of policies can be relatively simple, although not always (e.g., establishment of a new teacher cadre may be opposed by teacher unions). However, it is important to realize that even for these reforms full implementation can take much longer, whether because of innate complexities (hiring or retraining sufficient teachers to teach in local languages in all regions of the country, setting up school-level bank accounts, 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 (ie, 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 – promoting student-centered and interactive teaching 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 much 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 multi-faceted intervention over a period of several years is required. For its impact on student learning to be perceptible, even more time is needed. The same could be said for most of 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 in Box 8, above. If relevant, these actions can generally be adopted and implemented very quickly. The second step is to see which “structural” reforms of regulations, funding or governance arrangements are relevant, given the diagnosis of priority issues in that country. In general, it should be possible to implement a high priority (two or three) subset of reforms of this nature in an 18 month to two-year period.

But virtually all countries will want to initiate longer-term “quality” reforms at the same time. Given the inherent complexity of these reforms (ie, 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 towards 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. A modest initial framework can be developed significantly over time.

Analyzing capacity requirements. Clear goals are essential. Thereafter, available instruments for assessing organizational capacity can be helpful in thinking through strategies for phasing new functions into available capacity, and developing capacity over time²⁰. Phasing in changes can give countries more time to take stock, measure progress, perceive what is working and what is not, make mid-course adjustments, and plan next phases.

Setting targets. One of the challenges HIPC and PRSP countries face is setting explicit targets for improvement in key education outcomes that are at once realistic and achievable but which also “stretch” the system to better performance as rapidly as possible. 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

²⁰ The tool for “Assessing Organizational Capacity” developed by Elie Orbach of the World Bank is a good example.

1980s, only about 30% of all children were enrolled in primary school. Over the next decade, Burkina Faso and Guinea achieved a 50% growth in enrollments (57% in Guinea), while Niger registered zero increase. From an even lower base (23% of children enrolled), Mali expanded enrollments 109% over the same period. Quantum increases in the trend rate of progress are possible.

A caution, however, that gross enrollments in primary education in virtually all low-income countries are inflated by high repetition. It is much harder to attain the goal of universal primary completion, which requires school systems to eliminate student dropout. This, in turn, implies improvements in schooling quality and reductions in repetition. 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 one of the countries mentioned in Table 1, for example, primary gross enrollments currently exceed 100%. However, only 37% of students graduate with no repetition. As a result, the education system spends almost three times more per primary graduate than it should. In the absence of measures to improve system efficiency, universal primary completion would require additional school construction and substantial additional teachers and other resources. However 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.

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.

4.3 Analyzing the political feasibility of reforms

Change in education can be highly contentious, especially when key stakeholders perceive they will lose in the process (i.e. cost-bearers of reform). Examples of this are when Ministries of Education attempt to introduce changes in teacher contracting which affect job stability and/or wages, or changes in education governance whereby bureaucrats at the central level lose decision-making authority to lower tiers of government or to schools.

Yet some countries have achieved significant transformation of their education systems over the past 5-10 years: Brazil, India, Uruguay, 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 block education reform.²¹

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

²¹ For a useful overview, see Javier Corrales "The Politics of Education Reform: Bolstering the Supply and Demand; Overcoming Institutional Blocks", The Education Reform and Management Series II (1), World Bank, 1999.

organized and their unions' relationship to the party in power; the degree to which reform is proceeding in other sectors; the political strength, commitment and skills of the Minister of Education.

However, across a number of reasonably successful education reform cases, four factors which to a large extent represent strategic choices by the Ministry of Education stand out as important:

- Ability to articulate a coherent vision for long-term development of the sector and to build public support for education reform
- Ability to deliver some tangible short-term benefits at school level while pursuing a systematic long-term strategy
- Ability to win over or go around opposition stakeholders
- Ability to increase system transparency and demonstrate and communicate results

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. But successful reformers invariably stress the importance of effectively communicating the vision to mass audiences. Appeals to civil society can be used to influence bureaucratic and political leaders who are not firmly committed to reform. They can also 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 which counts, particularly in open and contested political systems. Successful Ministers of Education make extensive use of mass media and communications techniques; they devote serious attention to shaping the public debate over reforms, framing abstract technical concepts (such as accountability) in vivid human examples and invoking powerful connections to national symbols and values.

Delivering "quick wins". It takes years to register serious progress in the outcomes that are the ultimate objective of education reform (primary completion rates, student learning, etc). 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 demonstrate some "quick wins" in the form of highly visible changes at the school level that benefit both parents/communities and teachers. For parents and students, tangible benefits can include such things as elimination of school fees, on-time delivery and free distribution of books and materials, the establishment of community schools nearby, the involvement of parents in school councils.) For teachers, the provision of small grants for the development of local materials, quality 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. The challenge of education reform, however, is that it inevitably involves distributing costs, as well benefits. The largest cost-bearers are usually teachers, who typically face increased performance pressures (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 key cost-bearers are typically central or district bureaucrats who may lose control over resources (school budgets, construction contracting) or power (student access to desired schools, plum teacher assignments) and corresponding corruption opportunities. Political mapping tools can be helpful in evaluating potential sources of reform support and opposition.²²

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

- “coopting” key cost-bearers, by drawing them into the definition of reform goals and implementation through participatory approaches; or
- “isolating” or “working around” cost-bearers or opposition groups (such as teachers’ unions), by building alliances with other stakeholders (parents/communities, school principals, the business community, etc).

The most viable option will depend on the particular political circumstances (ie, the strength of the teachers’ union vis a vis 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 standardized student assessment system would likely not be.

If neither “coopting” 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 to create a sense of crisis and pressure for change. But successful reform programs also often involve explicit efforts to improve system performance data (EMIS, student assessment, teacher attendance records) and tighten accountability.

Effective reformers make active use of these results to communicate progress, both within the administration and to the public at large, to nurture support for the reform process. Weekly radio broadcasts, high publicity “awards” to outstanding teachers,

²² See Luis Crouch and Joseph DeStefano, “Strategy Development and Project Design”, Education Reform Support 5, ABEL Technical Paper No. 51, Office of Sustainable Development, USAID, 1997.

schools or school districts, visible new partnerships between businesses and technical schools – all these and other initiatives can have high payoffs in communicating reform progress and building continued 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 non-performing fiscal drain into a sector with high and positive political visibility.

4.4 Monitoring and evaluating reform implementation

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

- **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 resolve problems that inevitably arise and to take advantage of the 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 individuals’ well-being that can be attributed to particular programs or policies. It is a decision-making 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 in prioritizing public actions.

The PRSP chapter on: “Monitoring and Evaluation” provides more definitions and examples of good design on monitoring and evaluation systems.

Monitoring and evaluation have several benefits:

- they improve accountability
- they can increase stakeholders’ ownership of policies, programs and projects;
- they can build broader-based support for policy, program and projects;
- they can help to modify policies, programs, and projects while being implemented and thereby improve interventions’ effectiveness;
- they permit learning from experience and thus, capacity building; and,
- they inform policymaking and research.

Key elements for strengthened monitoring and evaluation practices are:

- **Critical role of participatory approaches.** If civil society and especially the poor are involved monitoring the implementation of public policies and programs, they 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. Strategies for impact evaluation must be built into the design of a policy intervention up front, with the collection of clear baseline data and a framework for monitoring outcomes and impact over time.
- **Improved budgetary management.** Monitoring of poverty outcomes (here 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; and,
- **Dissemination of results.** Greater transparency and accountability implies that the results from the monitoring system and the results of program and project evaluations are widely disseminated to different groups in civil society, as well as policymakers, program managers, program beneficiaries, the general public, the media, and academics.

A good example of heightened 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 based on: (1) a careful analysis of a wide range of earlier programs and (2) an administrative structure which 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 emerging lessons of implementation experience and analysis of newly generated data. The learning by doing enabled by an effective monitoring and evaluation system has proven to be an important capacity-building strategy in the case of DPEP.

Box 9: Improving Program Monitoring and Evaluation -- India's District Primary Education Program (DPEP)

It is hard to overstate the improvement in the quality of information available that has been achieved in just five years. Education statistics are timely, accurate and have become the accepted basis for policymaking and research. Problems -- such as declining intake trends in grade I in some DPEP districts, or single teacher schools or schools with excessively high/low pupil to teacher ratios -- can now be quickly identified, analyzed and acted upon in ways that were never possible. The extent to which DPEP's managerial culture of data-based analysis and "thinking through" has infused the entire 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.

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Technical Notes

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- II. Template for disaggregated enrollment
- III. Decision tree for analyzing education outcomes
- IV. Cost effectiveness of educational interventions: recent research