Chapter 5. Options for a cost-effective allocation of resources

By Alain Mingat

Cost-effectiveness analysis for quality education investigates the relationship between the means and methods of organizing schooling on one hand and the results obtained on the other. This chapter analyzes this relationship. This chapter consists of three main sections. The first provides the overall resource framework for education policy and examines how issues concerning the quality of the service offered fit into that framework. The second part specifically deals with factors concerning organization of schooling. It studies their impact on students’ achievement and their cost, and also examines the options for implementing and combining these factors. Finally, the third section highlights the fact that, although physical and financial resources are important for the provision of quality schooling, more qualitative, and pedagogical and management aspects must certainly not be neglected.

The context of education policy regarding quality

The effectiveness of policies aiming to develop a quality primary education system is to a large extent dependent on the resources government mobilizes for this level of education. These resources derive from (i) the country’s wealth (measured by the Gross Domestic Product and by the GDP per capita), (ii) the ability of the state to raise the revenue necessary to ensure the overall operation of its services, (iii) the budgetary priority allocated by the government to the public funding of its school sector, and (iv) the degree of priority allocated to primary education among the different levels of education.

There are significant variations in sub-Saharan Africa between countries on each of these four variables. The ability of low-income African countries to raise revenue varied between 8% and 26% in 2000 (Bruns et al., 2003), with a tendency for the poorest countries to encounter greater difficulties in collecting taxes (smaller tax base and more limited administrative capacities). Similarly, the priority given to the education sector varies greatly from one country to the next, with the proportion of public revenues allocated to educa-
tion varying from 10% to 33%. Finally, the countries do not all make identical trade-offs in favor of primary education, with figures between 35% and 66% for the first six years of schooling. All these variations together mean that the volume of public resources mobilized for primary education (measured as six years of schooling) varies significantly among the countries in sub-Saharan Africa, as shown in Table 5.1 below.

Table 5.1  Public current expenditure on primary education (% of GDP) in selected low-income African countries (2000)

<table>
<thead>
<tr>
<th>Country</th>
<th>% GDP for primary education</th>
<th>Country</th>
<th>% GDP for primary education</th>
<th>Country</th>
<th>% GDP for primary education</th>
</tr>
</thead>
<tbody>
<tr>
<td>Democratic Republic of Congo</td>
<td>0.2</td>
<td>Tanzania</td>
<td>1.1</td>
<td>Uganda</td>
<td>1.7</td>
</tr>
<tr>
<td>Central African Republic</td>
<td>0.6</td>
<td>Chad</td>
<td>1.1</td>
<td>Malawi</td>
<td>1.8</td>
</tr>
<tr>
<td>Guinea-Bissau</td>
<td>0.7</td>
<td>Ethiopia</td>
<td>1.2</td>
<td>Mauritania</td>
<td>1.8</td>
</tr>
<tr>
<td>Republic of Congo</td>
<td>0.8</td>
<td>Burundi</td>
<td>1.3</td>
<td>Niger</td>
<td>1.8</td>
</tr>
<tr>
<td>Guinea</td>
<td>0.8</td>
<td>Ghana</td>
<td>1.4</td>
<td>Sierra Leone</td>
<td>1.8</td>
</tr>
<tr>
<td>Sudan</td>
<td>0.9</td>
<td>Rwanda</td>
<td>1.4</td>
<td>Togo</td>
<td>1.8</td>
</tr>
<tr>
<td>Angola</td>
<td>1.0</td>
<td>Eritrea</td>
<td>1.5</td>
<td>Nigeria</td>
<td>1.9</td>
</tr>
<tr>
<td>Mali</td>
<td>1.0</td>
<td>Senegal</td>
<td>1.5</td>
<td>Kenya</td>
<td>2.8</td>
</tr>
<tr>
<td>Mozambique</td>
<td>1.0</td>
<td>Benin</td>
<td>1.6</td>
<td>Lesotho</td>
<td>3.2</td>
</tr>
<tr>
<td>Zambia</td>
<td>1.0</td>
<td>Burkina Faso</td>
<td>1.6</td>
<td>Zimbabwe</td>
<td>3.3</td>
</tr>
<tr>
<td>Cameroon</td>
<td>1.1</td>
<td>Gambia</td>
<td>1.6</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Madagascar</td>
<td>1.1</td>
<td>Côte d’Ivoire</td>
<td>1.7</td>
<td>Average</td>
<td>1.44</td>
</tr>
</tbody>
</table>

Source: Calculation by A. Mingat based on national statistics

This table invites two types of comments:

- The mobilization of financial resources varies widely from one country to another, with the highest figures three times the lowest, even if countries in the most extreme situations are excluded. Clearly, the choices in terms of the quality of the services offered are fundamentally linked to the financial contexts, which vary considerably among countries.

- Looking at the figures themselves and not the differences among countries, it is useful to reconcile the figures in Table 5.1 with the reference level of expenditure of about 2% identified as desirable in the analyses carried out in the framework of the preparation of the Fast-Track Initiative (Bruns et al.,...
2003). Even if this reference can be considered as indicative only, it does nonetheless suggest that in the majority of the countries primary education is more or less severely under-funded. This has consequences in terms of coverage of education systems, in the sense that the average completion rate for primary education for the countries was only 46% in 2000. It also places many countries in a delicate situation as far as quality is concerned, since the overall amount of available resources is often inadequate to meet even minimally acceptable provision at the current level of enrollment, while the pressure for increased coverage obviously remains high.

Once the level of public resources to be allocated to primary education has been decided, education policy must identify the way in which they are to be deployed. At this stage, the issue of the quality of the services provided becomes explicit. Two sequential structural trade-offs are taken into consideration: (i) the first trade-off to be made is general and determines the balance between the number of children in school and the average amount of resources allocated to each of them on average; (ii) the second trade-off to be made is more specific and relates to determining actual methods of organization of schooling (grouping of children, teacher training, etc.) to use the previously determined volume of resources per pupil. This section deals with the first of these decisions, and the later discussion in this chapter is devoted more specifically to the second.

Concerning the first point, there are certainly trade-offs. On the one hand it is desirable for the greatest number of children to be able to benefit from education, but on the other hand the average resources allocated per child should provide for as favorable a context for learning as possible. In a situation where resources are scarce, these two objectives cannot be perfectly reconciled, and it is the search for a balance between the two goals that is at the core of decisions concerning education policy at this level of analysis.

In reality, countries do not make the same trade-offs between the coverage of the services offered to their young populations and the resources that they mobilize on average for each child in school. This is true for all levels of education. It is certainly true for the primary sector, where there are extremely large differences in expenditure per pupil (between 6% and 35% of GDP per capita) among countries and where the countries with the highest expenditure per pupil also have on average the lowest quantitative coverage. Once this trade-

5. These trade-offs are naturally the same for each of the different levels of education.
off between the coverage of the system and the resources per pupil has been determined, the question is to determine how these resources can actually be used most effectively.

**Organizational factors: impacts, priorities and optimum combinations**

**Identifying the choices to be made**

A basic observation, at this level of analysis, is that for a given level of expenditure per pupil, there are a number of possible breakdowns among the various factors that characterize the organization of the education services offered. The following example *(Table 5.2)* illustrates this.

**Table 5.2 Teacher category, current resources excluding teacher compensation and class size for expenditure per pupil of 500 MU (hypothetical country)**

<table>
<thead>
<tr>
<th>Average expenditure per pupil (MU)</th>
<th>500</th>
</tr>
</thead>
<tbody>
<tr>
<td>Teacher category</td>
<td>A</td>
</tr>
<tr>
<td>Teacher's annual salary (MU)</td>
<td>12,000</td>
</tr>
<tr>
<td>Expenditure per pupil other than for teachers’ compensation (MU)</td>
<td>26.7 (1)</td>
</tr>
<tr>
<td>50</td>
<td>26.7 (1)</td>
</tr>
<tr>
<td>100</td>
<td>30.0</td>
</tr>
<tr>
<td>200</td>
<td>40.0</td>
</tr>
<tr>
<td>300</td>
<td>60.0</td>
</tr>
</tbody>
</table>

Source: Calculation by A. Mingat based on national statistics

If an expenditure level per pupil of 500 monetary Units (MU) is selected, for example, it can be demonstrated that within this unit expenditure, schooling can be organized in many very different ways by combining the use of more or less well-trained teachers, bigger or smaller class sizes and a larger or smaller amount allocated for costs other than teachers’ compensation. *Table 5.2 above* suggests a small number of these possible combinations. The factors analyzed here are the teachers (3 categories, A, B and C with respective annual compensation of 12,000, 16,000 and 24,000 MU), the expenses other than teachers’ compensation, varying between 50 and 300 MU; the class size is determined once the two other parameters are defined and the unit expenditure has been set.

These choices can vary: in case (1), the class size is at an attractive level (26.7
pupils), but the teachers are from the least-qualified category (A), and the non-salary recurrent costs are minimal. If it were to be decided to use better qualified teachers (category C) it must be accepted (*Situation 2 in the table*) that the class sizes increase to 53 pupils while expenditure outside of the teachers’ salaries remains very low (50 MU per pupil). *Situation 3*, in which the teachers are well qualified and the operational resources are adequate, can then be considered, but in that case there would be an average of 80 pupils per class. If it is decided that this figure is too high, the option would be to use category B rather than category C teachers, which leads to case 4, in which class size is reduced to 53 pupils.

The possible options do not stop there, however, as the expenditure-per-pupil item also has to be broken down into several components: textbooks, pedagogical material, ongoing training for teachers, assessment of pupils, pedagogical support for teachers and administration. If it is assumed that 100 MU will be allocated to the expenditure-per-pupil heading, this figure can imply allocating very little to textbooks and pedagogical support, none to ongoing training or assessment of pupils and a lot to administration; but obviously this amount can also be distributed in a completely different way. All these options are available; they are equivalent in terms of expenditure per pupil, but probably not from the point of view of the actual quality of the services provided. The main task is thus to identify the most efficient combinations in the sense that they enable us to obtain the highest level of pupil achievement for the same level of expenditure per pupil.

This assumes that what the economists call an education production function (i.e., a function that links the different inputs to schooling with the level of pupil’s achievement) has been identified. Work has been carried out to estimate this function in many African countries, either within the framework of international assessments (in particular the PASEC-CONFEMEN for the French-speaking countries, the SACMEQ for Southern African countries and UNESCO’s MLA) for a certain number of developing countries, or within the framework of specific projects carried out autonomously in a given country. Before discussing the findings of these production function analyses, the overall level of learning achievement of pupils in a number of countries that have participated in these programs will be reviewed.

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6. PASEC: Programme d’Analyse des Systèmes Educatifs de la Confemen (CONFEMEN Education Systems Analysis Program); SACMEQ: Southern African Consortium for Monitoring Educational Quality; MLA: Monitoring Learning Achievement. All these assessments were carried out after 1995.
The levels of quality of African education systems based on their results

The results obtained by education systems can be assessed on one hand using direct measurements of pupils’ achievement while they are still in school and on the other via measurements of the reading abilities of adults who benefited from schooling when they were young.

Student achievement has been measured in several countries by MLA, PASEC and SACMEQ. The results are, however, not directly comparable since different instruments were used. Nonetheless, since some countries have both an MLA assessment and either a PASEC or SACMEQ assessment, and all the existing measurements can be adjusted to fit them onto a single scale (that of the MLA), a reasonable comparison between the average scores of students in a fairly large number of countries can be obtained. Table 5.3 below presents the estimates resulting from this procedure.

Table 5.3  Estimated average score of pupils’ achievement in a sample of African countries

<table>
<thead>
<tr>
<th>Country</th>
<th>MLA Equivalent level of achievement</th>
<th>Country</th>
<th>MLA Equivalent level of achievement</th>
</tr>
</thead>
<tbody>
<tr>
<td>South Africa</td>
<td>49.6</td>
<td>Mauritius</td>
<td>64.1</td>
</tr>
<tr>
<td>Botswana</td>
<td>51.7</td>
<td>Namibia</td>
<td>48.1</td>
</tr>
<tr>
<td>Burkina Faso</td>
<td>52.7</td>
<td>Niger</td>
<td>40.8</td>
</tr>
<tr>
<td>Cameroon</td>
<td>60.0</td>
<td>Uganda</td>
<td>58.0</td>
</tr>
<tr>
<td>Côte-d’Ivoire</td>
<td>51.3</td>
<td>Senegal</td>
<td>42.5</td>
</tr>
<tr>
<td>Gambia</td>
<td>40.4</td>
<td>Togo</td>
<td>52.1</td>
</tr>
<tr>
<td>Guinea</td>
<td>51.6</td>
<td>Zanzibar</td>
<td>41.7</td>
</tr>
<tr>
<td>Kenya</td>
<td>68.8</td>
<td>Zambia</td>
<td>43.3</td>
</tr>
<tr>
<td>Madagascar</td>
<td>58.4</td>
<td>Zimbabwe</td>
<td>57.7</td>
</tr>
<tr>
<td>Malawi</td>
<td>48.5</td>
<td>Average</td>
<td>51.6</td>
</tr>
<tr>
<td>Mali</td>
<td>50.8</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Source: Calculation by A. Mingat based on national statistics

The importance of this table is not the relative positioning of the countries but rather the variations among the countries in sub-Saharan Africa, with the average success rate varying from 40% to 69%. But most importantly, the

7. The sample also includes Nigeria (MLA survey); the score has not been included in the table due to doubts over the validity of the figure for this country.
table provides evidence for the low average level of achievement in virtually all countries. The average figure of 51.6% indicates that pupils acquire on average only approximately half of the target content. Comparative data that are both recent and wide-ranging that would make it possible to situate the achievement of pupils in sub-Saharan Africa in a global context are not available. Recent data show that, on the same scale, Morocco scores 63% and Tunisia scores 71%. This suggests that the performance of African countries is likely to be relatively modest in comparative terms.

Using a broader range of comparative data, which is older (71 countries worldwide around 1990), Mingat and Suchaut (2000) noted that the African countries had much lower scores than OECD and Eastern European countries and also lower scores, though with less of a gap, than Asian and Latin American countries. However, when the level of economic development was taken into account in the analysis, the African countries’ performance was found to be comparable to those of Latin American and Asian countries in this area. Moreover, the fact that the performances of African countries are so different from one country to the next gives reason to be optimistic concerning the possibilities for improvements in the situation in many countries.

Another way of assessing school results is to examine the literacy levels of adults who attended school when they were young. A primary education cycle should enable those who attend to at least be literate in the long-term. While available data are not abundant, they are worth examining. Graph 5.1 summarizes the available data.

These data reflect the learning of people who attended primary school in the 1980s, as it is based on the reported literacy of adults whose average age is a little over 30. There are both notable similarities between the different countries and quite substantial differences:

- Similarities include the general shape of the curve, which is broadly logistic with (i) very low proportions (approximately 6%) of adults able to read easily without ever having attended school, (ii) numbers that increase as the number of years of education completed increase (on average 30% after three years, 59% after five years, then (iii) a progressive saturation and an extremely high proportion of adults who can read easily if they benefited from eight or more years of education in their youth.
- As far as the disparities among countries are concerned, there is a considerable variation in the proportion of adults able to read easily after initial education of similar lengths of time. For example, with five years
of education completed, 92% of adults can read easily in Rwanda, 83% in Burundi, approximately 65% in Cameroon, Côte d’Ivoire and Togo, compared with only 35% in Niger and 27% in Chad. These are considerable differences. It is also interesting to note that the proportion of adults who are able to read easily after five years of education completed (observed in 2000, but a result of how primary schools functioned in the 1980s) shows a positive correlation ($\bar{r}=+0.66$) with the achievement score of pupils in primary school in around 2000.

**Graph 5.1  Percentage of adults who can read easily according to the duration of their initial education**

In sum, together these two observations suggest clearly that (i) time spent in school is a fundamental ingredient for learning (which should encourage some countries to increase this time), and (ii) the productivity of this time can vary greatly depending on how efficiently it is used. These two elements are, for the most part, controlled by the country’s education policies.

After these general observations concerning the levels of learning achievement in sub-Saharan Africa, the extent to which variables related to the organization of instruction have an impact on the results obtained will be examined.
Factors related to the organization of schooling

This section covers two related topics. The first is the findings of studies assessing student learning achievement and the impact on it of decisions on the allocation and use of resources. Such empirical correlations can make an important contribution to the analysis of effective ways of organizing instruction. The second objective is to determine to what extent the expenditures required to bring about the gains in learning achievement are affordable. In a context of scarcity of resources, the fact that an element has a positive impact on learning is not enough; the impact has to be sufficient, taking into account the resources it requires. In a way, the starting point is not the impact of different factors; it is the resources. Here is the reasoning: Taking into account a given volume of resources per pupil, what combination of input and process variables leads to maximum pupil achievement?

In this context, it is the effectiveness of an additional monetary unit invested in one element, compared with that of its alternative use for another element, that defines the priorities and achieves an optimum organization of schooling in a given environment. Without going into unnecessarily complex issues of methodology, two essential issues are worth mentioning:

• The first is that it is not relevant to determine overall generic impacts: A marginalist perspective should be adopted when examining the impact and use of resources for a given variable. For example, the question is not whether teachers need training to do their jobs satisfactorily; this is known to be the case. Recruiting illiterate teachers is not an option; but this does not mean it should be assumed that recruiting the teachers with the highest qualifications is the best solution. Indeed, it is probable that, although teachers are on the whole more effective in terms of student achievement if they themselves have a higher level of education, there may be a point where pupils at a given level of education will not benefit much from having better qualified teachers, whereas the budgetary costs will rise rapidly. There is therefore an optimum level of education for teachers, taking into account the impact and marginal costs. The definition of this optimum level is the point at which the additional resources, instead of being allocated to a given impact (here the recruitment of better qualified teachers), would be better used (would have a greater impact on pupil achievement) if they were allocated to the additional funding of other impacts (textbooks, pupil assessment, pedagogical support for teachers, etc.).
• The second aspect is that, of course, an empirical stance must be adopted, and decisions should be based on fact rather than on unfounded or unverified opinion, but it is important to recognize the limitations of the findings. In fact, in a study that measures the impact of factor X on pupil achievement, both the validity of the concept on which factor X is based and the particular way in which the concept was implemented in the specific case needs to be examined. For example, in-service teacher training can be done in very different ways (depending on content and methods), and it is probable that some of these methods are cost-effective while others are not. In these conditions it would not be prudent to conclude, for a given country, that in-service teacher training is not a good use of resources because an empirical study showed that the formula implied substantial costs for little or no impact on student achievement. Examining the findings of a range of studies involving different design and implementation methods (possibly conducted by different countries) is thus a necessary part of the empirical approach.

The next section examines a key element of analysis in this chapter, identifying the factors (and the conditions of their implementation) that maximize the quality of educational services for primary education in a situation of financial constraints. This is a vast topic, and it will obviously not be possible to do it justice, with all possible details from all the literature and lessons learned from international experience on this point. This discussion is therefore selective and attempts to highlight the essential elements without resorting to caricature. To facilitate their presentation, the factors that directly concern the classroom context and those related to the surrounding environment have been separated.

Factors characterizing the classroom context
The following five variables will be covered: (i) teachers (education and training, gender and compensation); (ii) grouping of pupils (class size, double shift system and multiple-level classes); (iii) text books and pedagogical material; (iv) physical environment (buildings and equipment); and (v) time spent in school (scheduled and actual time, flexibility).

The teachers
There are four complementary aspects related to the impact of teachers on student learning that are important to take into consideration: academic level, professional training, gender and compensation.
**Academic training.** As noted above, it is important for teachers to have an academic training that enables them to fully master the content of the information they are to transmit to the pupils. The findings of numerous empirical studies on this issue (Behagel and Coustère, 1999) including the most recent ones (Jarousse and Suchaut, 2000; Bernard, 2003), converge to identify a minimum desirable level of education of around ten to eleven years of general education for primary school teachers (data from Cameroon, Côte d’Ivoire, Senegal, Togo, Mozambique, etc.). Above this level, the gains for the pupils are small or non-existent. It could be argued that it should not be a problem to employ teachers with better qualifications; after all, it is preferable to have teachers with a good academic level rather than those with just the minimum requirements (“Who can do a big thing can do a smaller one”). Looking at the impact only, this would evidently not pose a problem. Whereas ten years of general education correspond approximately to the certificate of the first cycle of secondary education, we could, for example, as a certain number of countries do, use primary school teachers with 13 years of general education, which correspond to the certificate of the second cycle of secondary education (high school leaving certificate). Analyses in several World Bank studies in sub-Saharan Africa (Mingat, 2004b) suggest that the difference in compensation between teachers who have completed ten to thirteen years of education is between 25% and 40% (sometimes more, in certain cases such as Mozambique). There is thus a considerable cost for the system if recruitment targets teachers with a higher level than that which is necessary as a minimum for carrying out the job competently, because there are, of course, alternative uses for these funds, whose impact on achievement is proven and whose funding may be insufficient. Clearly, going beyond that which is functionally necessary would correspond to a non cost-effective use of public resources.

**Professional teacher training.** Two complementary aspects are generally considered, pre-service training (just before and at the start of the teacher’s career), and in-service training during his or her career.

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8. For French-speaking countries, 10 years of general education typically corresponds to the category of «assistant primary school teacher» whereas 13 years of general education corresponds to the category of «primary school teacher»

9. This observation determines the category of teachers it would be desirable to recruit and the associated level of compensation. The minimum academic level for recruitment without preventing more qualified people from applying can thus be defined.
When the pre-service training of primary school teachers is considered, it is clear that extremely varied situations exist among the different countries on the continent and even within countries, where different formulas often coexist, including clear variations in terms of duration, content and methods. For example, the length of training varies from very short periods, particularly for new categories of teacher (temporary teachers, contract teachers, voluntary teachers, “parent teachers”) to pre-service training of up to three years; in addition, the training may offer, in varying proportions, content of a pedagogical nature and general content related to the subject matter to be taught. All these different activities fall under the generic header of “pre-service teacher training.” Empirical studies assessed the impact of pre-service teacher training on pupils’ achievement, but unfortunately many are insufficiently detailed and contextualized to allow the separation of the impact of pre-service training from the particular way in which the activities are implemented. Nevertheless, the results suggest that long training periods are probably not necessary if the training proposed is truly focused on the actual act of teaching, handling a class and organizing the teacher’s work (preparing lessons, diversified planning of time and learning activities, organization of pupil assessment to adjust the way the class is run, etc.) The recent assessments conducted by the PASEC in Togo (PASEC, 2003b) and Guinea (PASEC 2002) support this conclusion by underlining (i) that an absence of pre-service professional training is not a good option, and (ii) that professional training of a few months (probably four to six months) accompanied by support for teachers during their first year of practice is as good an option as a long pre-service training period\textsuperscript{10} (two years or more), especially when it is done in combination with recruitment of candidates with more years of general education (Lockheed and Verspoor, 1991). Since short training has lower costs and is more likely to produce the number of teachers necessary to reach the EFA goals, it is quite clearly more cost-effective to operate this way.

In-service teacher training is strongly supported by education experts. They emphasize that teachers become trained, to a large degree, by teaching and building their professional skills through the results-focused and inquisitive performance of their tasks. This occurs, however, rarely spontaneously; it is greatly facilitated when the teacher is not left alone in this effort of professional growth and self-improvement. This is true in particular because outside

\textsuperscript{10}This result was not, however, foreseen by the education specialists in Guinea, which had predicted that the new FIMG low-cost training would lower the quality of schooling.
technical contributions can provide precious help and because it is important for teachers to share experiences and remain motivated to actively improve personal practice.

Once again, what is provided under the heading “in-service training” for primary school teachers may correspond to activities that differ considerably: At one end of the scale this may mean standard subject-based training enabling primary school teachers to prepare for the competitive examination to teach in secondary schools; at the other end of the scale it may cover teachers who work together with an inspector or a pedagogical advisor to find practical ways to better organize their teaching and deal with difficulties encountered in the classroom (this kind of pedagogical support for teachers can in fact be considered part of their ongoing training). Between the extremes, training may aim to introduce new curriculum content or new textbooks. In these conditions, and in particular due to the fact that empirical assessments of ongoing teacher training are not generally placed in context, it is not surprising that it is difficult to reach an unambiguous conclusion concerning their impact, and in the same way, to identify the most relevant formulas. It does not, however, appear imprudent to suggest that (i) in-service training can have an impact — probably a significant impact — on the quality of education services offered, and ii) again, how classes function and the actual activities the teachers are to perform is what should be targeted.\textsuperscript{11}

The issue of the \textit{balance between general education, pre-service and in-service training} in the overall teacher training strategy is also worth examining. Taking into account the observations made above, it appears that a formula combining a short pre-service training period targeting how to handle a class with support organized during the first year of teaching and regular and structured ongoing training concerning actual class management could be a relevant formula for the quality of education services, especially when the teacher can be recruited with some 11 years of completed general education (Lockheed and Verspoor, 1991). For many countries, this could bring a new balance, where the resources for initial training would be reduced but those for in-service training and support increased. This formula could also lead to positive cost-related aspects since salary grids are often indexed on the initial training received. Recruiting teachers in a “lower” category creates greater financial space to improve quality elsewhere, in particular by facilitating the

\textsuperscript{11} The empirical observations are not of particular help in supporting this appraisal.
funding of in-service training and creating the space for a positive incentive structure for career development.

The teacher’s gender. The proportion of women in primary education varies greatly from one country to another within sub-Saharan Africa (between 7% and 60%), and this proportion is significantly higher in English-speaking countries (approximately 45%) than in French-speaking countries (29%). In low-income countries in Asia more than half and in Latin America more than three-quarters of the teachers are women. The departments that manage teaching staff sometimes complain of the difficulties they encounter with women teachers (difficulties assigning them to rural areas, and replacing them during maternity leave). And yet, the results of empirical studies (Mapto-Kengne and Mingat, 2002), based on both international comparisons including large numbers of countries and national studies on individual data (analysis performed on a sample of nine African countries), demonstrate two things with little ambiguity: (i) there are no systematic differences in student performance related to the gender of the teacher; and (ii) retention during the primary education cycle is significantly higher for girls when the teacher is a woman rather than a man (or the proportion of women among the teaching staff is higher, as far as the international comparisons are concerned). This supports the conclusion that despite possible “logistical management” difficulties, improving the gender balance of the teaching staff will very often be a desirable policy, as it does not imply any notable costs and offers proven advantages.

The issue of teachers’ compensation. This issue is delicate and difficult, yet it has to be examined in the analysis of the financial viability of strategies for quality education. What are the principles and what are the empirical data? The principles are doubtless quite simple (without necessarily being easy to implement): Teachers’ salaries should be sufficient to make it possible to recruit and retain adequately qualified teachers who will be happy with their profession. The conditions of the local employment market are an important reference in this respect. If the teachers are too poorly paid (i) recruiting the people needed in terms of quality and quantity may be difficult; (ii) high staff turnover may result, which is not desirable as it jeopardizes the development of a stable teaching body consisting of individuals who build their professional capacities over time; (iii) underpaid teachers may be tempted to pursue another activity and allocate less time to their teaching job; (iv) underpaid teachers may impose (illegally or in a disguised way) school fees on the parents of children in their charge. There are also major disadvantages inherent
in setting pay levels too high. Indeed, setting salaries too high compared with
the equilibrium wage of the national employment market, although it facili-
tates recruitment and retention of teachers, has the consequence either that
the government budget will not permit recruitment of the number of teachers
needed to develop the system (*Graph 5.2*) or will lead the ministry to let the
teaching conditions deteriorate, either in terms of upward pressure on class
sizes (*Graph 5.3*) or making non-wage resources, useful in ensuring quality
of service, scarcer.

Based on this discussion, it clearly is not easy to identify the balance point
between compensation that is too low and that which is too high. This issue
must obviously be dealt with according to the national context (Lesotho is
not in the same situation as Benin, for example). It can, however, be useful to
note some international benchmarks. In 2000, the average salary of primary
school teachers in low-income African countries varied between 1.5 and 9.6
times the GDP per capita (the average was 4.4 times the GDP per capita). The
countries that have the highest primary school enrollment and completion rate
had average teacher salary values of 3.6. Eleven of the 33 low-income African
countries have an average level of teacher compensation below this value, and
22 countries have a value higher than this reference.

*Graph 5.2*  **Relationship between teachers’ salaries and
the gross enrollment rate in 31 countries
in sub-Saharan Africa**

Source: Calculation by A. Mingat based on national statistics
Graph 5.3  Teachers’ salaries and pupil/teacher ratio in primary schools in 38 countries in sub-Saharan Africa

![Teacher-pupil ratio graph]

Source: Calculation by A. Mingat based on national statistics

**Grouping students**

Three factors are taken into consideration for grouping of children: class size, double-shift organization, and multi-grade organization.

*Class size.* In the course of the first few years of school, common practice favors teaching by a generalist teacher who covers all of the subject matter in the program. This is justified by the fact that (i) the content of the disciplines is simple and can be reasonably managed by an individual teacher, and (ii) that the environment is more favorable for the students when there is a single teacher who knows them well and takes care of all of their needs. There is also agreement that, particularly in secondary education, the teachers should be specialized, due to the specific nature of instruction and to the need for student autonomy. At issue are the most suitable moment and the pace of the process of transition for switching from instruction by a generalist to a subject-matter-specialist teacher. Cost analyses suggest that for the first six or seven years of education, the single generalist teacher is the most appropriate model, due to (i) the often significantly higher cost of specialized teachers who frequently belong to a category with higher pay levels and more limited working hours, and (ii) the absence of evidence of benefits of this formula in terms student achievement. Furthermore, the use of specialized teachers means that schools have to be big, which is difficult to realize at the primary level in rural areas.
The question of class size is often controversial and hotly debated. First of all, it should be pointed out that it is an important question, because the average unit cost is directly dependent on the numeric value for the average class size. The cost per student of teaching classes of 60 students is little more than half of teaching groups of only 30 students per class. So there are considerable savings to be found in organizing schools into classes that include more students (and therefore create opportunities to increase expenditures in other inputs or even for increasing teacher compensation\(^\text{12}\)) or, conversely, very high additional costs for reducing the average number of students per class. Teachers always emphasize the fact that it is easier and better for the students to have smaller classes (the argument being that discipline is easier to manage and that the teachers can do a better job of diversifying their lessons according to the diverse capacities of their students). Empirical analyses based on student learning achievement surveys (standardized testing) or on the success rates at national exams for the African context show surprising convergence in demonstrating that the impact of class size for a range, say from 30 to 60 students,\(^\text{13}\) is, given present instructional practices, relatively modest (Behagel and Coustère, 1999; Bernard, 2003). In view of these conditions, it no doubt seems preferable not to reduce the average size of classes below 45 to 50 students,\(^\text{14}\) unless the other factors in operating the school are considered satisfactory. For many countries (though not all), reducing the average class size much below this level may not be a first priority.

**Double-shift organization.** The purpose of this organization is to get around the constraints of the limited number of places available in densely populated urban areas. In order to avoid either classes that contain 120 students (beyond the physical capacities of the existing classrooms and the feasibility of running a class in an educationally satisfactory way) or refusing to enroll a certain proportion of children, classes are organized to take in one group of students in the morning and another in the afternoon, in an attempt to maintain an ac-

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12. Korea, like other Asian countries that have extremely high-performance education systems, has opted (even today although their level of development is much higher than 30 years ago) for a formula characterized by quite large class sizes (50-55 pupils) and relatively high teacher salaries.  
13. There are probably no plans for classes of 15 students – financially unfeasible – or for classes of 100 students – hard to manage and often physically incompatible with the existing classroom sizes.  
14. Above and beyond the management of class sizes, countries have to manage possible dispersion. In the current situation this is often not satisfactory (disparities between allocation of personnel to the different regions or provinces, between urban and rural areas and ultimately between schools). Progress in this area has to be achieved in the great majority of countries in sub-Saharan Africa.
ceptable number in each shift. A variety of measures have been taken in order to put this formula into actual practice, with recourse to one or two teachers and with more or less reduction of classroom time in comparison with the standard organization.

Assessment of results in terms of quality generally show a loss in the students’ learning levels due to the reduced amount of time in school (effective school time is often reduced by about one-third); this loss does not seem to have very significant consequences during the first two or three years of school but may become substantial thereafter. Evaluations in terms of gains in educational coverage are mixed. Indeed, if the formula uses two teachers (effectively creating two schools in one building) there is no reduction in operating expenses but there is the important gain of an improvement in the use of capital. If the formula uses just one teacher for both shifts, the gain is often illusive. The class size of each shift is reduced, but the bonus paid to the teachers for handling two shifts (obviously well-deserved) often ends up reducing the financial benefits and jeopardizes the objective of enrolling the largest number of students within a fixed budget. On the whole, with losses in student learning (small or substantial, depending on the grade where the formula is used) and few or no gains in terms of coverage, the double shifting should in the case of a single teacher handling two classes be used only very carefully. It should be closely analyzed for its advantages (especially the optimized use of infrastructures) and disadvantages before any commitment is made, with the understanding that rigorous assessment will be needed after the fact if the formula is implemented in order to verify the balance of its advantages and disadvantages.

*Multi-grade organization.* This model consists of combining, in the same classroom and under the authority of the same teacher, students in two or more grades of the primary cycle. While the double-shift model was devised for the densely populated urban setting, this one is aimed at rural settings with a low population density. In this context, the number of children that can be enrolled locally is low, and unless all of the children from a very large geographical area (imposing on some a distance to school that constitutes a deterrent to enrollment, especially for girls) attend the same school, the schools will have a very low enrollment. According to the standard school (six grades/six teachers) organization, the number of students per class would then be very low, resulting in very high unit costs. In practice, recruitment often does take place only every two or three years and the school remains incomplete (i.e. the
school cannot offer all of the grades of a cycle, as in Mauritania, Mozambique, Benin, and Burkina Faso. This, of course, has very negative consequences on retention of the students until the end of the primary cycle. If the educational cycle is six years, grouping the students into two or three levels within two or three classrooms (headed by two or three teachers for the school) is a formula that makes it possible to provide complete enrollment at reasonable cost in schools that are within reasonable walking distance for the children.

This model can be implemented in a very structured way. While the teacher works with one group of students, the students of another group work alone or in groups on practical exercises or research. Then they are rotated and the teacher works directly with the group that was doing exercises before, having given work to the other group of students that he or she has just finished teaching directly. Some instruction may be followed by both groups. The teacher has been trained to manage this formula and has a set of practical exercises and work to assign to the students who, in turn, have special notebooks for these activities. Under these circumstances, the evaluation results show that the formula is superior to the standard formula (the students work more, and more didactic variation is observed). The best results have been observed where students are provided with (semi) self-instructional materials and students are organized to help each other (peer teaching) and contribute to classroom management. Escuela Nueva in Colombia is probably the best example of this strategy (Schiefelbein, 1991).

The model can, however, be implemented in a dysfunctional way. For example, in Nepal and Madagascar, under the label of multi-grade teaching, the formula used is that of sequential organization of instruction. A teacher in charge of the students for the first three years takes the first year students, for example, from 8 a.m. to 10 a.m., those of the second year from 10 a.m. to noon, and those of the third year from 3 p.m. to 5 p.m. (when they are not with the teacher, the children are sent home). This formula produces very negative results, because it effectively amounts to a drastic reduction in classroom time, which has been found to be very detrimental to learning.

To the extent that the road that remains to be traveled by the countries aiming towards universal primary education is very much a “country road” (a large majority of the children who currently do not have a complete primary education is rural), the way to apply the multi-grade classroom formula should no doubt be explored by a large number of education ministers in sub-Saharan Africa.
Textbooks and pedagogical materials
In general, empirical studies highlight textbooks as a variable with a high cost-effectiveness ratio for improving learning. Beyond this general observation, there are nevertheless some qualifying remarks to be made. These concern the number of titles that should be involved, the role of student workbooks and teachers’ manuals, the proportion of students who should have textbooks and the issue of textbook prices.

School programs often cover a relatively large number of disciplines or subjects, which are expected to be included in textbooks. The consequence of a large number of textbook titles is that the cost of textbook provision may exceed available resources. Under such circumstances, it is necessary to define priorities. Regarding the number of textbook titles, the number may be different for the first years of school (where the reading primer is the book with the strongest impact and the impact of textbooks for other subject matter is not always clear and probably highly dependent on the way they are used) or the more advanced classes (where three or four textbooks are probably justified but not eight). Empirical evidence suggests that a student math textbook has little impact, but a workbook is probably crucial. For the sciences, the textbook for students appears to be important, particularly since the teacher cannot usually illustrate the teaching content in any other way (illustrations, diagrams, etc.). In fact, the teacher’s manual almost always has a substantial positive impact, because it provides a simple, instrumental way of clearly and unambiguously showing teachers the content of the program and the way they can effectively transmit it to the students. Moreover, teacher guides can ensure a minimum of homogeneity in the teaching dispensed by teachers with varying characteristics and training backgrounds.

The question regarding the proportion of students who should have textbooks has often been debated. Around 15 years ago it was thought that in situations with limited resources, one textbook for two students would be a reasonable compromise. More recent empirical studies suggest that it is important for all students to have textbooks. If there are not enough textbooks for all of the students, the teachers tend to use a pedagogical approach in which teacher talk becomes the main source of knowledge; in this case, the textbooks only play a complementary role, and the benefits are limited to those who possess them. However, when all of the students have textbooks, the teaching approach can change and the teacher can use the book as support material, both for the lessons and for the students’ individual work.
As regards the price of textbooks, policies of charging for textbooks have sometimes been justified with the argument that it is important that parents purchase the textbook, even at subsidized prices, because they will then realize that it is a costly object that must be treated carefully by the students. The consequence of this policy has been that, in particular, students from deprived backgrounds do not obtain textbooks. Today it is considered preferable that textbooks be supplied to the students at no cost. However, the books do cost money, and the price of a textbook with given characteristics may vary depending on the formula chosen by the buyer. A free textbook policy (and it is probably desirable to take this approach) requires, however, a lot of vigilance to identify the most economical way of procurement and distribution (see in particular Diop, 2002).

**School buildings**

There are two important basic observations concerning *school buildings*: (i) There generally is substantial variation in the types of construction used for classrooms, both among countries and within them, from classrooms built with local materials and having a very short lifespan to solid buildings built according to demanding specifications, using traditional materials for all or part of their construction; (ii) there also are several different procedures used, from direct implementation by some aid organizations to community construction projects and formulas where the construction is done by small local builders under the supervision of government technical staff or community organizations. It is worth noting that while the quality and durability of these classrooms are not always comparable, they also correspond to extremely different unit costs for classroom construction (some run more than ten times the cost of others). Recent evidence suggests that it is more the type of institutional package involved than the type of construction that accounts for these cost differences (see in particular Theunyck, 2002).

Given that the investment budgets for classroom construction are burdensome (and this is so independently of who provides the financing), and that there is a lot of variation in the unit construction costs, it is clearly important to examine whether there is a differential impact on the learning of the students associated with these different methods of building. In fact, very few studies correlating the quality of educational services (as reflected in the students’ achievements on standardized tests or national exams) with the characteristics of the classroom, show a significant impact. It is what goes on in the classroom that counts more than the physical environment in which the educational services
are provided. Under the circumstances, the arguments in terms of priority actions are clearly in favor of frugality in construction methods and community-based methods of implementation. The argument for durability does not necessarily lean towards the choice of the simplest formulas but towards compromises that ensure acceptable durability and cleanliness with relatively low costs. Recourse to community-type formulas with technical support and essential materials are particularly promising.

Apart from the school building itself, the *furnishings* are important to consider. In the African context, there are notable differences on this point from one country to another, as there are often large differences from one school to another within the same country. The empirical results concerning this aspect are also mitigated. They sometimes suggest a lack of impact (Togo, Côte d’Ivoire) but also sometimes a positive impact of these material conditions for the students in their classrooms (Cameroon). On the whole, one can probably not expect a considerable impact on learning from these furnishings (the students in the BRAC schools in Bangladesh are seated on the ground – albeit in a clean room – and achieve acceptable academic results). It is still true that the cost of these furnishings can be relatively low (in particular by using locally produced items that have at least a ten-year lifespan) and that an equipped room that is clean and orderly helps create a favorable environment for discipline and for learning.

**Classroom time**

*The time provided.* The analysis of literacy retention showed that time spent in the classroom – a central element of the child’s opportunity to learn – is a key determinant of learning achievements. This confirms the findings of numerous studies on effective schooling conducted in the developed countries (Lockheed and Verspoor, 1991). In the African context, the theoretical teaching time in the course of a year is variable from one country to another, but what probably makes the most difference is the extent of the difference between the theoretical time and the actual time (the latter may be significantly lower than the former). There are many reasons for this: one may consider (i) the effective shortening of the school year at both ends and (ii) the shortened school hours during the school year.

Regarding the first point, it is not unusual for the actual beginning of classes for a number of students to be delayed by one or two months because of the late assignment of teachers and the poor monitoring of the actual taking up of their duties; in addition, it is also not rare that classes are effectively sus-
pended a month before the official end of the school year because of end-of-year examinations. As a result, the school year may average only seven out of the nine months it is officially scheduled to last. On the second point, the teaching time in the course of the school year may be shortened because of the difficulty in finding replacement teachers, the absence of sanctions for the unjustified absences of some teachers, and the time required by some teachers to collect their pay; in some countries, at least 20% of the classroom time is lost in these ways. If one combines the possibility of losing two months at the end of the school year and that of losing 20% of the time during normal operation, one can arrive at a situation where the effective learning time provided amounts to barely more than 60% of the theoretical time allotted. This reduces the opportunity to learn and adversely affects learning achievement. Improvements in these problems (undoubtedly occurring in most sub-Saharan African countries) are more a matter of organization than of cost. Precise evaluations should be conducted in each country of these aspects of school operation in order to (i) identify the extent of the problem and (ii) identify the measures to be taken to make improvements and then verify that progress in this area has actually been achieved.

The time demanded. A second aspect of classroom time also deserves examination. This is the same question, but from the students’ perspective. While it is important for the classroom time to be offered, it is also important that there be a demand for this classroom time so that the students’ actual presence at the school will result in the learning intended. But the scheduling of the school’s operation during the course of the year and during the school day is not necessarily in line with the ideal, considering the domestic chores expected of the children (participation in farming throughout the year, fetching water throughout the day). Opportunity costs can often be reduced by allowing more flexibility for the calendar and the hours (in an organized manner, of course) without changing the expected number of hours of teaching but in fact increasing the actual volume and consequently the amount of learning and the quality of the school. In addition, improvements in the quality of instruction have been found to positively affect demand for schooling, attendance and retention (Verspoor, 2001).

Impact of education policy and practice
The three following points will be examined: (i) the issue of grade repetition (quality, use and retention of resources); (ii) acting on the demand (free schooling, school cafeterias); and (iii) the role of pre-school education.
The issue of grade repetition
The practice of having students repeat classes is highly variable among the sub-Saharan African countries, since the frequency of repetition ranges from 1% to 36%. UNESCO statistics show that on average, it is much more frequent in French-speaking and Portuguese-speaking countries (an average of about 25%) than in the English-speaking countries (an average of about 10%). National averages have remained stable over time. There is no question that repetitions incur costs that, all other things being equal, create a burden on budgetary expenditures for primary school of more than 20% in the French-speaking countries. The standard argument for maintaining the practice of repetition is that the positive aspects of ensuring the quality of the educational services provided outweigh these costs. The validity of this claim can be examined from three angles: an international comparison, a comparison between the schools within a given country, and between individual students.

An international comparison for several countries of data on the frequency of repetition shows that it is highly variable from one country to another and that students’ average learning acquisition also varies significantly (see Table 5.3). If repetition were actually a means of ensuring quality education, the average level of student achievement in the countries that are rigorous in this practice (where repetition is frequent) would be higher than in the countries that take a more lax approach (low level of repetition). This is not what the evidence shows (Mingat and Sosale, 2001); in fact, no correlation has been found between these two figures. In contrast, the same analyses show that there is a very strong and significant negative relationship between the frequency of repetition and the levels of retention in primary cycle classes: one additional point in repetition implied an average decrease of 0.80 points in the rate of retention. When separate analyses are done for boys and girls, girls are found to be more at risk for the negative consequences of repetition, since the coefficient was 1.05 for girls and 0.55 for boys.

Comparing among schools in a given country: if it is assumed that repetition is a guarantee of quality, the rates of repetition can be expected again to be lower where the students’ average levels of learning achievement are higher. But this is not what the data in Graph 5.4 show.

15. This means that if a country has a 25% rate of repetition and a retention rate of 65%, the retention rate could reach 77% \([65 + 0.8 (25-15)]\) if the repeat rate was reduced from 25 to 10%. The reason for this is that, for a family, repetition leads to increased costs (direct and opportunity costs) by one (or several) additional years of school attendance while indicating that the child is not doing well in school and will perhaps not benefit from it as expected.
At the individual student level, the implicit idea is that when students are made to repeat, it is for their own good, as they have not acquired the necessary foundations and it would be a disservice to them to move them up to the higher class level. To test the empirical significance of this assertion, PASEC conducted longitudinal surveys of students in Burkina Faso, Côte d’Ivoire and Senegal (PASEC, 2003a), evaluating (i) their levels of learning at the time the decision is made whether to repeat or promote to the next grade, and (ii) how they progressed later on in their education and learning, depending on whether they actually repeated or not. The results show that repeating does not usually enable students to progress more than they would have if they had been promoted.

On the whole, repeating is often seen as a method for reducing the diversity in knowledge and skills levels among students in a classroom, but it is twice as costly (due to the fact that two years must be paid for in place of one and the fact that repetition is often the motive for quitting school early, particularly among girls) without actually delivering much benefits in terms of educational quality. It therefore does not seem that large-scale recourse to repetition constitutes a valid practice from a quality standpoint, either for the system or for
the individual students. To continue the argument developed earlier in this text, it is even very harmful, since the method consumes resources that could be more usefully invested in other activities for improving the system in either quantity or quality. This does not mean that one should necessarily aim for reducing repetition rates to zero and promote automatic passing. But for a number of countries, there is room for a substantial reduction in the repetition rates, which are clearly excessive.16

**Demand-side policies**

To a large extent, the ideas expressed up to this point have been largely concerned with the supply of education services. This is mainly the domain of educational policies, particularly those targeting the qualitative aspects of the system. But for learning to occur, the students have to be present. School systems have a natural tendency to grow quantitatively, beginning with the populations that are easiest to enroll (populations in which the demand for schooling is high, in urban settings), then extending their actions into populations that are less easy to include, finally encompassing the most difficult and most vulnerable at a later stage. In the current situation, those who do not have a complete primary school education are disproportionately the poor and the rural children and, within these groups, the girls. If the objective of a primary school Education for All is to be achieved, it means that these populations must be included. In order to do so, the usual actions for increasing the supply of education are necessary but often not sufficient. For some groups, actions targeted on the demand side will need to complement the supply-side interventions. Numerous measures and methods of action can be envisaged; here, only two-free schooling and school cafeterias-will be discussed.

**Free education.** In many African countries, parents are expected to contribute to providing their children with various materials (textbooks, writing instruments, uniforms, etc.) required by the schools for their enrollment and for contributing directly to various types of school expenses, whether official or not. Surveys of households reveal that these contributions can be substantial (even for public schools), and a large share of them is in monetary form. Even if there is some flexibility at the local level, it is still true that for poor families, the direct costs of educating their children often constitute a difficult obstacle, which is resolved by either non-enrollment or by intermittent enrollment or

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16. There are strategies to reduce repetition. Among these the organization in sub-cycles without repetition within each, as well as support for teachers to better evaluate the progress of their pupils and set up positive management of their diversity, are the most relevant.
by leaving school early before the end of primary school, thereby contributing to maintaining the cycle of poverty, because these children later become illiterate adults. The point is empirically supported by analyses of the household surveys (ORC, 2003a,b; ORC, 2001a,b), but above all it is demonstrated among countries that have recently implemented a free education policy, for example Malawi, Uganda and Cameroon. The cases thus provide convincing evidence that the elasticity of demand for education compared to the price to be paid for the service is significantly negative, especially for the most vulnerable segments of the population. The situation is likely to vary from one country to another, and country specific analyses will need to be considered to identify the extent to which demand-side constraints – in particular financial ones – preclude progress towards universal primary education. This can help to identify a strategy for targeted action for the populations concerned.

School cafeterias. A number of countries have established school cafeterias often (but not only) in connection with the very positive campaigns by the World Food Program. They offer two types of advantage: The first is that they help fight malnutrition. Nearly 30% of children under the age of five in sub-Saharan Africa are significantly underweight. The fact that the children do not suffer from malnutrition can only be beneficial for their ability to concentrate and learn. But this is probably not how the schools benefit the most from the cafeterias. The main benefit is that when the children receive food at school, the parents send them more regularly; this has a positive effect on school attendance and learning achievement. This being said, the school cafeterias can turn out to be a relatively costly item (most obvious for the countries that support them with their own budgets). There are two complementary lines of thinking that can be developed from this point: (i) the first of these is a search for low-cost methods, and many of these undoubtedly call for implementation that involves working with the parents and the communities, since they are responsible for implementation, although the state contributes to the operation, and (ii) the second of these is to have a strategy for targeting the most vulnerable populations and areas in order to maximize the impact of this help and the efficiency of the resources mobilized for this purpose. These two avenues should probably be pursued in a complementary manner.

17. Work carried out in almost all countries, based on analyses of household surveys, within the framework of preparing follow-up for the strategy for the fight against poverty could be used for this type of targeting.
The role of pre-school education
The development of activities for very young children, and particularly pre-school education for children in the four to five-year-old category, for the benefit of the most vulnerable populations, is the first objective covered in the Dakar Forum declaration on Education for All. There are a number of studies (see for example Hyde and Kabiru, 2003) that highlight the benefits for the operation and quality of primary education (improved learning, reduced frequency of repetition and improved retention by students in the course of their primary education). Jaramillo and Mingat (2003) estimated that 50% coverage for two years of pre-school in a typical African country could reduce the frequency of grade repetition by 14% to 20% and increase the retention rate by 65% to 80%. However, the fact that benefits can be expected is not sufficient justification for mobilizing the public resources for this purpose when budgets are tight or when there are equally ambitious alternative objectives (access to secondary education, adult literacy programs, etc.) with potential claims on resources. Pre-school education, as it is currently organized, is expensive (the estimated unit cost for traditional pre-school education, on average in African countries, is 40% higher than that of primary education). The calculations show that this kind of pre-school education, taking account only of the benefits of improvement at the primary level, is not a cost-effective use of resources. Public financing within the scope of a sector-based educational policy will therefore be difficult to justify economically and will not be financially feasible in most sub-Saharan Africa countries.

On the other hand, one should not be too quick to reject a policy on the grounds that a particular application has not been recognized as cost-effective. In fact, it is possible to seek out a community-based form of organization to develop such activities for young children. Comparative evaluations of the effects of formal and community-based pre-schooling conducted in Cape Verde and Guinea showed that the benefits for children in terms of preparation for primary school were comparable (and even somewhat better for the community formula), but that the public costs for the community formula were significantly lower than those for traditional pre-schools. Under the circumstances, the preceding conclusion that pre-school education as a strategy for improving the quality of primary education was not cost-effective should be revised. One then arrives at the conclusion that the benefits are probably much greater than the costs, making the development of community pre-school education (which must of course be defined in operational terms) a useful element of the overall strategy for the sector.
Qualitative, pedagogical and management factors

Up to this point in this chapter, the emphasis has been placed on education policies that have a tangible impact on the utilization of resources that finance the inputs to the education system. It obviously makes sense to adopt such an approach because it is these policies that determine the budget, and that is where the scarcity of resources is most acutely perceived. Nevertheless, school quality policy will consist of more than the mobilization and allocation of additional resources, even if this is done with a strategy that is empirically well justified. The resources are only means that create a context that is more or less favorable for learning. They are not the learning itself. The latter is what matters, and the policies discussed so far do not have a direct impact on this. The transformation of resources into results (the teaching of students) is an essential step. Of course this transformation implies education policies, but they are of a different type, since this concerns actions involving pedagogical and managerial practices.

In the present situation in African countries the capacity of systems to transform the resources that are actually mobilized into results that are actually obtained is not good. This is evident as much at the comparative international level as at the comparative level among schools within a given country. The two Graphs 5.5 and 5.6, below, illustrate the issue.

Graph 5.5 **Average achievement level and unit costs in 18 African countries**

Source: Calculation by A. Mingat based on national statistics
From the comparative international perspective, there is a significant variation among the different countries both in terms of the levels of students’ average scores (from 30 to 70) and of that of unit costs (from 5% to 35% of GDP per capita), but there is no relation between these two measures, with the countries featuring higher expenditures per student, on average, showing no higher levels of student achievement. In Graph 5.6, each point represents a class. On the vertical axis of Graph 5.6 appear the achievement levels at the end of the school year of pupils in each of the classes in the sample, after controlling for their level of achievement at the beginning of the year and their personal and social characteristics. On the horizontal axis is the amount of per-student spending in each of the classes in the sample. Once again, there is very broad dispersion and very little relationship between level and unit cost of the class and the progress of students in this class in the course of the school year. At each level of unit cost, students’ progress may be high in one class and low in another. This is a management problem as well as poor pedagogical practices. Some schools have very few resources while others have plenty, yet many schools with seemingly adequate resources (above average, in any case) show modest achievement results. The problem is that these “low performing” schools are not known to the responsible authority (because there is no information mechanism regarding this point), which consequently cannot act to remedy the situation. Pedagogical management is clearly inadequate.
When the question is viewed from the perspective of quality of educational services offered, it is found that resources are necessary but cannot ensure high levels of learning achievement. An analysis of the variation in levels of student learning, measured by standardized testing, within a given country\(^\text{18}\) found that the process by which resources are transformed into learning has an impact that is three to five times greater than the volume and distribution of the resources per se. This clearly underlines the fact that any strategy aiming to improve the quality of instruction should consider substantial improvements in the management of this transformation of resources into results at the school level. It will probably be necessary to (i) actually measure the students’ results, and (ii) see that the systems set up the appropriate response mechanisms (incentives, pedagogical support, sanctions, etc.) for schools that show poor performance levels. This will require analyses in order to identify the relevant measurements, followed by resources for their implementation as well as follow-up evaluation of the results. But there is no doubt that this approach is necessary, first, as the key to improving the quality of service and, second, as a justification for the mobilization of additional resources.

**Conclusion**

What emerges from this review most clearly is that there is no magical solution or remedy to the challenge of improving school quality. All factors in education policy need to interact and intersect to form a system that offers good quality services to its users. The interactions in education systems are such that if a country deviates substantially from an approach that establishes a reasonable balance among all variables, there is a risk of jeopardizing the entire mechanism. This is all the more important when there are serious financial limitations, as is the case in sub-Saharan Africa.

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\(^{18}\) This work was carried out in over 10 countries in sub-Saharan Africa. The results presented here give an overview. Although these figures do indeed differ from one country to the next, the orders of magnitude are very similar.
Chapter 6. A relevant curriculum for quality basic Education for All

By Martial Dembélé and Mamadou Ndoye

Introduction: relevance, a shared preoccupation

The reforms analyzed in the case studies for Burkina Faso, Burundi, Mali, Nigeria and Zambia refer to the adaptation of curricula with the explicit aim of reinforcing the relevance of learning. The experiments are generally presented as responses to the needs of the local/national context that the existing education model did not take into account, or did so inadequately. The curriculum reforms were – in different ways – related to the need to:

(i) Realize the endogenous potential for local/national economic development through the acquisition of skills related to real life and/or opportunities for productive work in the local/national milieu;

(ii) Assert cultural identity through introducing local/national languages, values, know-how and heritage into school education;

(iii) Promote values and behaviors related to hygiene, health, nutrition, the environment, family life, social cohesion and democratic citizenship, taking local/national specificities into account; and

(iv) Improve learning achievement and strengthen the internal and external effectiveness of education systems based on strategic bilingualism.

To understand these moves towards relevance in curriculum reforms, it should be remembered that schools, in their current form, are not the product of the internal development of African societies. The system was imposed from outside by colonization. The ideology of colonial education rejected or devalued the local cultures and languages, relegating them to the level of “folklore” and “dialects.” Consequently, they were disqualified from the realm of schooling and objective knowledge. Through the monopoly of the colonial language in schools and a program content reflecting a Eurocentric vision, schools aimed

19. This chapter is principally based on the background documents prepared by Alidou and Maman (2003), Halaoui (2003 a,b,c), and Weva (2003), and on case studies carried out in Burkina Faso, Mali, Niger, Nigeria and Zambia (Annex 1) within the framework of the present study.
to extend and consolidate the colonial conquest by training, assimilating and co-opting an elite group of allies. In addition to the subjects with an ideological bent such as history, literature and possibly geography, even scientific disciplines were used to serve this mission. The need to train future aides to the colonial administration (e.g., assistant administrators, African nurses and doctors, teaching monitors and others) strongly affected the organization of schooling, instructional objectives and curriculum content.

Following independence, most reforms were limited to removing the most obvious problematical elements from the programs and Africanizing content, in ideology-related subjects in particular. This answered to the need to assert an African identity. African languages were introduced in schools for the same reason. Guinea was a pioneer in this area. In 1968, driven by Sékou Touré, Guinea opted for monolingual education in African languages and rejected the use of French for instruction. The decision was taken in June and implementation began in October. This radical experiment with a cultural revolution as its backdrop ended with the death of Sékou Touré in 1984. It has left memories that make it difficult to re-introduce today national languages in Guinean schools.

There were also attempts to ruralize schooling in response to perceived development needs. The most publicized example of this is Tanzania, where Julius Nyerere introduced the concept of Education for Self-Reliance (ESR) in the 1960s. In practice, this involved (i) reorganizing the school year to enable pupils to fully participate in agricultural work with their parents; (ii) integrating learning in school and work in the fields so that children learned modern agricultural techniques and became aware that their living standards and those of the nation depended on agriculture; (iii) restructuring the curriculum to make space for subjects more relevant to rural development issues; and (iv) diminishing the importance of formal examinations as a way of evaluating pupils’ performance. However, the need to redefine the purposes of schooling in light of the demands of the new nations remains in most African countries a challenge that has only been partially met. This goes a long way to explaining the objectives of the reforms presented in the case studies. In addition, the massive unmet demand for quality education and the challenges that Africa currently faces has triggered a much greater awareness of the limits of the elitist colonial model.

The challenges of continuing poverty, the ravages caused by the HIV/AIDS pandemic and malaria, the catastrophes resulting from civil conflicts, and
the marginalization of Africa in the process of economic and technological globalization all calls for an educational response. After all, and it is worth repeating here, education is a primary factor and a condition sine qua non for social and economic development, peace and tolerance and scientific and technological competitiveness. To what extent does increasing the relevance of curricula prepare the young generations to face these challenges by offering them quality learning? Before answering this question, it is important to clarify the concepts of curriculum and relevance.

**Conceptual clarifications and functional definitions**

The concept of a curriculum has several accepted meanings, which can refer to programs offered in an education system, a level or sub-sector of the system, an area of specialization or a training school. In a systemic perspective, the concept can encompass the ideological priorities and aims of the education policy, the general goals and general objectives of the programs, the training objectives and content, the teaching and learning processes, the organizational procedures and the physical and didactic support materials, and the assessment and decision-making systems.

The concept of relevance has to be distinguished from the related concepts of quality and effectiveness. Quality is achieved through the processes and results of learning. But the fact that learners successfully learn what is specified in the programs does not in any way mean that what they have learned is relevant. The same is true for the effectiveness as it relates to the internal productivity of systems, since the reduction in the number of grade repeaters and drop-outs or the fact that a large number of students complete the full cycle in a normal time frame does not automatically mean that the curricula are relevant.

Indeed, there is no absolute measure of relevance. Relevance is always defined according to the reality of the environment or a need (i.e., the extent to which a curriculum responds to this reality or this need). The case studies demonstrate that the understanding of what constitutes a relevant curriculum may reflect (i) a submission to the reality of the lives of the learners in their social, cultural and economic milieu; (ii) a better fit between the experiences of the local environment and school learning; and (iii) a strong emphasis on the usefulness for and utilization by the learners of the knowledge and skills acquired.
When curricula are said to be relevant, the questions need to be asked: For whom? In relation to what? In terms of decisions and influence on the orientations of the curriculum (by the state, pressure groups, international partners, etc.), the references of what is relevant may be diverse and even contradictory. Nonetheless, in relation to learning and the reality of the context and needs, three essential questions are raised:

- What are the students learning?
- Are they learning it well or poorly?
- Of what use to them is what they are learning?

Considering the objectives and contents of basic education (as defined at Jomtien), relevant curricula should enable learners to: (i) master the tools and strategies that enable them to learn how to learn by developing their cognitive capacities and to be lifelong learners (reading, writing, arithmetic, communication, problem-solving); (ii) situate themselves in relation to the values and references of their society and culture in order to fit in and learn to live in harmony with others; and (iii) develop skills for everyday life to satisfactorily handle hygiene, health, nutrition, environment, family life, peace, tolerance and democratic citizenship issues.

Relevant curricula foster learning in that they do not consider the learner as a “tabula rasa.” On the contrary, they are based on learners’ previous experiences, language, culture, environment and knowledge, to facilitate the progression from the known to the unknown, from family and community education to school education. They encourage learners to actively participate in constructing knowledge and to establish an interactive relationship between school learning and life experiences. Relevant curricula use all these elements from the child’s surroundings as support material for observation and experimentation, objects for investigation and exploration and fields of application and practical work in order to specifically develop methodological capacities and general skills that transcend learning situations and provide a gateway to the world and to development.

Relevant curricula make learning meaningful. What is reading, and what is it for? What is writing, and what is it for? What is arithmetic, and what is it for? Learning, including instrumental learning, must be based on educational and training support material and content that makes it meaningful. People do not learn just for the sake of it. Learners are motivated to learn when they know how useful their learning is and what it can be used for, either for their personal development or for developing their local community. In a rapidly-changing
globalized world that demands a capacity for adaptation and innovation to pursue social and professional mobility and to invent new solutions for new situations, one of the most essential characteristics of a relevant curriculum is its flexibility (i.e., its openness and adaptability to both the needs of the local context and development for the future).

**Recent reforms aimed at adapting curricula in sub-Saharan Africa**

Since the 1980s, a second wave of curriculum reforms and innovations has begun in sub-Saharan Africa. These can be categorized as: (i) reforms related to the purposes of education, (ii) linguistic reforms, (iii) pedagogical reforms and (iv) reforms related to the organization and management of classes and student numbers. The second part of this chapter provides an overview of experiences that fall into one or more of these categories.

**Reforms related to the purposes of education**

*Social and professional predestination, (pre-) professionalization and productive work.* For many people, one of the basic indicators of the relevance of formal basic education is the extent to which it prepares the children to function in their milieu and move into the world of work. Reforms that aim at social and professional predestination, often with (pre-) professionalization and productive/manual work as the instruments use this expectation as a justification but are far from being consensual options.\(^{20}\) Social and professional predestination and (pre-) professionalization raise ethical issues in that they bring with them the risk of enclosing children in their local environment, limiting their horizons and perpetuating social stratification, whereas schooling is perceived generally as an instrument for social mobility. They also implicitly exclude the preparation of children for post-primary studies. Moreover, basic education is usually expected to provide the foundations for lifelong learning, which may be jeopardized by (pre-) professional programs. But most importantly, basic education should be forward-looking and prepare children not for today’s world, but for the world as we imagine it will be in several decades (Lewis, 1969). Moreover children who complete the primary

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\(^{20}\) Social and professional predestination means that existing social and professional activities determine the content of the education/training provided to children; (pre)-professionalization is a corollary of social and professional predestination in that it implies preparation for given careers; and by productive/manual work, we mean productive activities that generate income performed in school and involving the pupils.
cycle (aged 11 to 15) are still too young for the job market. In fact the main problem with manual/productive work at school lies in the aim of this work, which in turn determines the instructional objectives and strategy. Is this work designed to prepare the children for the productive processes of their milieu – which means its nature is social and professional predestination or (pre-) professionalization, or is the aim to use the productive work for pedagogical purposes? What impact could the productive work have on the time available for other learning? Is the productive work compatible with the principal mission of schooling (i.e., education)?

These questions are relevant in that productive activities (including agriculture, animal husbandry, market gardening, etc.), after being left aside following unfruitful experiments just after independence, have re-emerged in a number of African education systems. This choice has to be carefully considered to avoid transforming schools into small businesses and depriving children of instructional time.

In Burkina Faso, in the context of bilingual education, in two villages in particular, the curriculum included productive activities as performed in the region (Ilboudo, 2004). The children, who identify with the adults who perform these activities, welcome such activities enthusiastically. Here, the activities were sheep and poultry breeding and growing beans and peanuts. This meant that sale of the products of these activities was assured.

In Niger, within the general program, the practical and productive activities are split into three specific programs, one for crafts and technology, one for farming, forestry, pastoral and fish breeding activities, and one for home economics (Niger 1990).

The case of Nigeria’s Nomadic Education Program (NEP) is a special one (Ministry of Education Nigeria, 2004). The existing curriculum included productive activities such as rabbit and pig breeding. Since the NEP targeted populations who were mainly Peulh and Muslim and did not engage in this type of breeding, the curriculum was adapted to replace these activities with sheep and goat breeding and shepherding, which corresponds more closely to prevailing economic activity in these communities (see Chapter 9 for more details on this program, in particular the results obtained).

21. The experience of training for young farmers (FJA) in Burkina Faso is a case often cited.
The pedagogical use of productive activities is not explicit in these cases. It is important however to encourage this. The Ethiopian project *Popular Participation in Curriculum and Instruction (Box 6.1.*) appears promising in this respect.

**Box 6.1. Community participation in adapting the curriculum and in teaching in Ethiopia**

This pilot project involving 26 teachers from 15 schools consists of enhancing the official curriculum with local practices, productive activities such as carpentry, pottery, traditional mediation and agriculture. Using the model adopted for the project, the community communicates what it would like children to learn about their local context, particularly concerning trades, culture and history, and identifies the specialists who are in the best position to provide information. The project trains the teachers to work with the chosen specialists to create and teach lessons. Following this training, the teachers and the experts jointly design a document, then a lesson on each chosen local topic; the specialists give the lessons as special classes, and the project then helps the teachers integrate them into the official curriculum. This is an example of adapting the curriculum to local realities by enhancement, by adding something.

The specialists and the community welcomed this initiative, which values local professional activities in the eyes of the whole community and the pupils, thus helping eliminate prejudices against crafts such as pottery, weaving and blacksmithing, while benefiting children as far as cognitive learning (mathematics and history, for example) are concerned, and benefiting teachers from the academic and pedagogical viewpoints.

*Source: USAID, 2001*

The issue of (pre-) professionalization is worth examining carefully because most children in sub-Saharan Africa will not pursue education beyond this level. It is therefore easy to understand the expectation that primary education should prepare young people for the world of work and encourage entrepreneurship. An option would be to include content in the curricula for the last or last two years of the cycle that enables pupils to acquire knowledge, skills and attitudes that will enable them to successfully follow further short-term vocational training. The content in question would include practical applications in mathematics and science and skills for everyday life as priorities. The vocational training offered should be limited and at most be seen as preparation for more ambitious vocational training later.

*Education for sustainable development.* The major development challenges sub-Saharan Africa is facing today require the introduction of new educational content in school programs. This content includes, among other things, the...
environment, demographics, health, nutrition, peace, tolerance, human rights, gender equality, democratic citizenship, and information and communication technologies (ICTs). As space constraints preclude a discussion of all these topics, the review below is limited to the environment, health and peace.

**Education and the environment.** Over the past two decades, sub-Saharan Africa has been confronted with some harsh environmental realities. Thousands of square miles of previously productive savanna have been turned into desert by over-grazing, forests have been destroyed by abusive use of slash-and-burn shifting cultivation, rivers and oceans have been over fished, and pesticides have been use thoughtlessly so that vegetable production becomes dependent on them and too expensive. Good knowledge of the environment and good use of this knowledge can contribute to avoiding these situations (Bajah, 1993).

Many countries have adapted their curricula to highlight these issues and fight them at the source. The resulting education about the environment is in most cases distributed among the different subjects in the curriculum. In Kenya, for example, it appears in the teaching of agriculture, science and geography (Ngige, 1993). *The Program of Training and Information for the Environment (PFIE)* initiated by the Permanent Interstate Committee for Drought Control in the Sahel (CILSS)\(^{22}\) with the financial and technical support of the European Union, is a promising experiment both from a pedagogical point of view and in terms of sub-regional and regional cooperation (*Box 6.2.*).

**Education and health.** In terms of health, the HIV/AIDS pandemic is the major worry at present in sub-Saharan Africa, considering the number of people affected. The symbiotic effect of this plague on the economy and education requires a joint effort by several development sectors, including the education sector. The case of Uganda (*Box 6.3.*) eloquently demonstrates what education can do within the scope of the fight against the HIV/AIDS pandemic.

It should be noted that in almost all, national EFA plans, an important place is accorded to information/awareness training of students, teachers and parents and dealing with children and teachers suffering from the disease. In view of the threat it represents for the offer and demand of basic education in several

\(^{22}\) The following countries are members of the CILSS: Burkina Faso, Cape Verde, Chad, Gambia, Guinea-Bissau, Mali, Mauritania, Niger and Senegal.
countries, implementation of the strategies and actions provided for in these plans is of the utmost urgency.

**Box 6.2. Fighting drought in the Sahel through education related to the environment**

The Program of Training and Information for the Environment (PFIE) is the first part of the Sahel Education Program (PSE) adopted by the CILSS Heads of State Summit in 1988. Launched in 1990, the PFIE aims to encourage children in school in the Sahel to adopt a more active and respectful attitude towards the environment and develop their sense of individual and collective responsibility in managing nature and its resources. A multi-disciplinary team (including professional educators, environmentalists, evaluators and communication specialists) and a National Steering Committee have been set up in each country. A regional committee was set up to coordinate transnational exchanges.

Action in schools combined three approaches: a **pedagogical approach** through the official introduction of education related to the environment (EE) into school programs, the training of teachers, production of pedagogical material for teachers and pupils, the implementation of Environmental Action Projects (PAE) designed by the pedagogical teams, and the organization of pedagogical days; a **communication approach** aimed at raising awareness of parents, local authorities, teachers, etc. concerning environmental issues and obtaining their participation through environmental protection initiatives; and a **partnership approach** by developing links between the school, technical departments in government agencies, projects and other institutions committed to actions to fight desertification.

The experimental and consolidation phase of the PFIE (1990-1995) involved 78,066 pupils, 1,881 teachers and supervisors and 908 schools. For the second phase (1995-2000), the aim of which was to perpetuate EE in education systems in the Sahel, 672,000 pupils, 15,400 teachers and 3,015 schools and communities were targeted.

The PFIE was the subject of an impact study that covered 8 of the 9 member countries (Ba and Tounkara, 2000). The study revealed significant positive results as far as pupils were concerned: Most reached a good mastery of the environmental content integrated in the curriculum in terms of hygiene, protecting and restoring the environment. For teachers and school heads, teamwork was identified as the main contribution of the PFIE. Seventy percent of school heads believe the program contributes to improving their skills in terms of administrative and financial management of their schools, thanks to the training received for managing environmental action projects. Finally, the PFIE also contributed to improving relations between schools and the communities they serve and encouraged communities to commit more to activities designed to protect their environment. They also made it easier for schools to obtain areas or sites for demonstrations.

Source: http://www.insah.org/
**Box 6.3. The school program on AIDS in Uganda**

Uganda is one of the first countries to have introduced a school program about AIDS. In 1986, the Education Ministry launched a major campaign including the preparation of curricula for primary and secondary education, seminars, training workshops for teachers, plays about HIV/AIDS and, above all, the introduction of education on HIV prevention as part of a national policy. Encouraging signs have been observed since then: Decrease in the number of HIV infections, drop in the percentage of young pregnant women (15-19 year old) infected from 29.5% in 1992 to 10-14% in 1996, increase in the age of first sexual intercourse, reduction in the number of occasional partners and increased use of condoms.

Two programs are worthy of presentation. The newsletters *Straight Talk*, aimed at secondary school pupils, and *Young Talk* aimed at primary schools were widely distributed. In 1995, a survey showed that, out of 1682 adolescents interviewed, 43% obtained their information on HIV/AIDS from the radio, primary source of information and 8% got it from *Straight Talk*. The *Madarasa AIDS Education and Prevention Project (MAEP)* was carried out by the *Islamic Association of Uganda (IMAU)* and UNICEF with the aim of providing information and teaching how to behave with infected people. The association worked in 350 schools. The program included understanding adolescence, adolescent friendships, understanding of sexuality, facts and myths about HIV/AIDS, safe sex, responsible and safe living, discussing things with parents, etc. Training was given to Imams on teaching about HIV/AIDS. This program enabled 20,000 children to receive training between 1995 and 2001.

Source: Schenker (2001)

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**Education and peace.** As discussed in *Chapter 1*, sub-Saharan Africa is the region the hardest hit by armed conflict. From west to east and the center to the south, several countries are experiencing emergency and crisis situations. As is the case for the HIV/AIDS pandemic, the education sector is among the hardest hit and is also called upon to contribute to national rebuilding and establishing sustainable peace. In Congo, a country known for having one of the most traditional academic education programs, the same value was given to education for peace and human rights as to French and mathematics following the civil war (Mandavo and Mallali-Youga, 2001). A more recent case of education for peace is that of Sierra Leone (*Box 6.4.*), where ten years of war caused enormous loss of human life, displacement of communities, traumatized the population and caused severe damage to national infrastructures. To tackle this situation, among other actions education was chosen, and a curriculum was prepared for education for peace.
Box 6.4. Education for peace in Sierra Leone

The concept of peace on which the curriculum was based does not only imply rejecting war but also asserting activities, practices, norms and values that are observed in societies not in conflict. In addition, the main objective chosen for education for peace is to encourage learners to think about the concept of peace in order to observe how this concept is applied in reality. On this basis, the curriculum was designed as a set of tools, including an introduction to the philosophy of peace chosen, a set of cross-cutting units covering general questions, specific curricular units split according to topic and the age of the learners, and school community activities which aim to build a more peaceful school and community. Facing trauma, communication, resolving conflict, and human rights and democracy are the curriculum’s four main topics.

Source: Bretherton, Weston and Zbar, 2003

Linguistic reforms: bilingualism as a strategic choice. Whether teaching is unidirectional, bi directional or multidirectional, it is in essence a communicative process. For the teacher and the learner to communicate effectively, they must use a language that both understand. In addition, and arguably more importantly, language mediates learning to the extent that it is primarily through words that one can access new information and connect it to what one already knows. It is also primarily through language that one can display what one has learned when asked to do so or when the opportunity arises. Indeed, language and thought (and by extension action) are inextricably interwoven. Finally, if formal education is to effectively contribute to the advancement of the community it serves, it must take into account the medium of communication in that community (i.e., its language). In other words, the language that is used as medium of instruction plays a critical role in the teaching-learning process. It can be an enabling or a disabling factor in the process, depending on how familiar both the teacher and the learner are with it.

In light of the foregoing, it is understandable that the introduction of African languages as media of teaching and learning or as school subjects has had a prominent position on post-independence reform agendas in most sub-Saharan African countries, the majority being former colonies of France or England. The Accra Declaration (ADEA, 1996b) is illustrative in this respect:

*We solemnly declare our deep conviction that the promotion and use of African national languages in formal and non-formal education will ensure a greater success in the training of human*
Besides socio-political and cultural motives for doing so, there is a scientific (linguistic, psychological and pedagogical) case that has gained in robustness over the years (see for instance ADEA, 1996a; Alidou and Maman, 2003; CONFEMEN, 1995, 2001; Komarek, 2003; Halaoui, 2003a, 2003b, 2003c). But until the mid-1970s (and beyond, in several cases), the introduction of African languages in schools was framed as an either/or choice vis-à-vis the language of the colonial powers. The experiences of Burkina Faso (then Upper Volta), Burundi, Guinea, Madagascar, and Tanzania, to name but a few, are illustrative cases. Since the mid-1970s and more recently, however, the issue has been framed in terms of mutually reinforcing teaching of African languages and the colonial language as a strategy for improving the quality of education. Commonly referred to as bilingual education, this strategy has the following common features across countries:

- Use of the African language (L1) as sole medium of instruction in the first or first two years of schooling;
- Introduction of French, English, Portuguese or Spanish (L2) as subject matter towards the end of the first year or starting in grade 2;
- Use of L1 as both subject matter and medium of instruction starting in grade 2 or 3;
- Use of L2 as both medium of instruction and subject matter starting in grade 2 or 3; and
- Progressive increase in the use of L2 as children move up grades, with a corresponding decrease in the use of L1 as the medium of instruction.

The modalities for switching from L1 to L2 vary from one country to another; so does time allocation to each language across grade levels. But the basic underlying principle is to lay the foundations in the language most familiar to the child to ensure more effective learning of L2 later on. The application of this principle has been found to have considerable advantages over a situation where children, from day one in school, have to learn a language that has little in common with their mother tongue and simultaneously learn other subject matters through that language by:

23. It is worth noting that as early as 1951, UNESCO adopted a declaration on “The Use of Vernacular Languages in Education”, thus canonizing the education principle that the best language of instruction is the mother tongue of the learner.
• Ensuring a smooth home-school transition;
• Enabling the development of early literacy;
• Laying the foundation for high performance in L2 by grade 4 or 5 and in other subjects such as math and science;
• Contributing to making education culturally relevant;
• Establishing the link between cultural relevance and parental involvement in and demand for schooling, as the use of mother tongue facilitates the integration of local knowledge and skills into the school curriculum;
• Contributing to the emergence of a new kind of African citizen, who accepts and experiences bilingualism and biculturalism as assets; and
• Encouraging instructional practices that are child-centered, active and participatory.

These advantages are exemplified in several country case studies commissioned by ADEA in the framework of the Challenge of Learning study. They include:
• Bilingual Education in Burkina Faso (Ilboudo, 2004);
• Pédagogie Convergente in Mali (Fomba et al., 2004);
• Bilingual Education in Niger (Hamidou et al., 2004); and
• Primary Reading Program in Zambia (Sampa et al., 2004).

All four cases provide a strong case for considering bilingual education as one of the most promising paths to follow for improving the quality of basic education in sub-Saharan Africa. Although it is the newest of the four, the Zambian program (Box 6.5.) provides the strongest basis for opting for bilingual education in sub-Saharan Africa.

Mali’s experience, one of the oldest, raises issues of going to scale after a five-year long experimentation that began in 1987 with two first grade classes in two schools. With an addition of two new classes each year, by 1992, only 12 classes were involved. Incremental generalization began in 1994-95 and concerned 67 schools involved in a previous experiment with Malian languages since 1979. By 1999-2000, program coverage had reached 345 schools, 1000 classes and 1600 trained teachers and pedagogical advisors. The pace of generalization appears to have been set mainly by the challenge posed by the plurality of languages. There has been steady progress nonetheless, and 13 languages, spread over eight regions, are now covered. The results in terms of children’s scholastic achievement have been consistently remarkable as shown in Table 6.1.
Box 6.5. The primary reading program in Zambia: an example of simultaneous bilingualism

In 1995 Zambia organized a National Forum on Reading in response to the observations made by several studies that children’s performances in reading and writing were significantly below desired levels. Among other things, the Forum recommended literacy for children in African languages while maintaining the English language component of the basic education curriculum. The primary reading program (PRP) resulted from the conclusions of this forum. The program’s main objective was to facilitate learning how to read and write. For these two subjects, the PRP uses, in first year, teaching of reading and writing of a Zambian language associated with the teaching of oral English; in second year; students pursue education in the Zambian language, and oral and written English is taught based on what was learned in first year, and from year three to year seven, consolidation of the teaching of reading and writing of the Zambian language and English is carried out. The Zambian languages chosen, seven of them, and English are all languages of instruction; each is used to teach how to read and write in the given language. For other subjects, at all levels, English, which remains the official language, is the language of instruction. However, teachers and pupils may express themselves in English or in one of the Zambian languages taught, to improve communication.

Textbooks and teachers’ guides have been prepared for this program. Teachers were trained to teach the two chosen languages – the Zambian language and English. The content of the training is included in a manual, the *New Breakthrough To Literacy Training Manual.*

Launched in 1998 as a pilot project in two districts involving 25 schools, 50 teachers and 2000 pupils, the PRP rapidly developed, and since the school year 2002–03 has covered all 4,271 primary schools in Zambia. This rapid expansion is due to the excellent results recorded in terms of positive effects on learning. In the first year, an improvement of 780% was recorded for the test in Zambian languages in 2000, compared with the data from 1999. In the second year, a 575% improvement was recorded in the English language test. Finally, from year three to year five, the improvement in reading results varied between 165% and 484%. Overall, children read at the desired level in Zambian languages and are a year behind in English, whereas the previous data showed they were at least two years behind in both languages. These encouraging results contributed to reinforcing the role of literacy, particularly in the first two years.

Source: Sampa et al., 2004

These results must, however, be interpreted with some caution, as they may be attributed in part to differences in conditions of learning (pupil/teacher ratio, textbook availability, teacher support and motivation) between PC and non-PC schools. This cautionary note applies equally to the experience of Burkina Faso (*Box 6.6.*), reported by Ilboudo (2004).
### Table 6.1  Mali: Pupils’ success rate in year 7 entrance examinations

<table>
<thead>
<tr>
<th>Years</th>
<th>Success rate of pupils in PC schools (%)</th>
<th>Success rate of pupils in standard schools (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1994</td>
<td>56.52</td>
<td>40.62</td>
</tr>
<tr>
<td>1995</td>
<td>37.64</td>
<td>42.34</td>
</tr>
<tr>
<td>1996</td>
<td>75.75</td>
<td>54.26</td>
</tr>
<tr>
<td>1997</td>
<td>50.0</td>
<td>36.89</td>
</tr>
<tr>
<td>1998</td>
<td>71.95</td>
<td>48.30</td>
</tr>
<tr>
<td>1999</td>
<td>78.75</td>
<td>49.13</td>
</tr>
<tr>
<td>2000</td>
<td>68.57</td>
<td>52.34</td>
</tr>
</tbody>
</table>

Source: Statistics, MEN, Mali

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### Box 6.6. Bilingual education in Burkina Faso

In Burkina Faso, bilingual education was conceived, designed and implemented in partnership by a community at the grass-roots level (the Manegdzânga Association), a team of university researchers members of the ELAN-Développement Association, a Swiss NGO (SLA), and the Ministry of Basic Education and Literacy (MEBA) through the National Literacy Institute.

After experimentation in a limited number of schools showed a significant impact on students’ learning achievement, the Ministry of basic education with the support of SLA has designed and validated a specific curriculum for bilingual schools. This curriculum covers the contents of the classical primary school in five years instead of six. This economy of time and resources is made possible by the use of the children’s first languages (L1) and the progressive introduction of French (L2), the latter with the ALFAA method. In the first year, 90% of the teaching is carried out in L1 and only 10% of the curriculum is devoted to oral French. The share of L1 is 80% in the second year, 50% in the third year, 20% in the fourth year and finally 10% in the fifth and last year where French becomes the main medium of instruction. To date, seven national languages are used in bilingual education: Mooré, Jula, Fulfulde, Lyélé, Gulmancema, Dagara and Bisa. In addition to the contents of the classical curriculum, children in bilingual schools carry out practical and manual activities carefully graded according to their ages.

Overall, the results have been quite positive. For instance, by grade 3, students reach a level in French equivalent to that of mainstream 4th graders. In calculus, in the first year, they are reported to master the four operations with numbers from 1 to 999 while their counterparts in mainstream schools have difficulties in handling the same operations with numbers from 1 to 20.

Source: Ilboudo, forthcoming.
Two findings are consistently reported across these cases and others: effective acquisition of early literacy and high performance in the second language. These findings are critical for the following interrelated reasons:

- Educators, including teachers, acknowledge that reading ability is critical to the extent that it is a learning tool;
- Ability to read is reported to be one of the best predictors of educational achievement and survival (see for instance Carnine, 1998; Hanson and Farrell, 1995; Juel, 1991; National Reading Panel, 2000).

Yet various multi-country evaluations, e.g., UNESCO’s Monitoring Learning Achievement (MLA), the Programme d’analyse des systèmes éducatifs de la CONFEMEN (PASEC), and the Southern African Consortium for Monitoring Education Quality (SACMEQ), indicate that literacy levels, especially reading ability, are very low among African students.

For these reasons, one cannot insist enough on the need to improve reading instruction and learning in sub-Saharan Africa. The practice of bilingual education, as summarized above, holds a lot of promise in this respect. However, a number of challenges have been reported. The main one has to do with managing the switch from L1 to L2. This issue, according to Alidou and Maman (2004), has received little attention. “Yet this pedagogical aspect of bilingual education is a fundamental problem that must be understood and resolved so that learners in bilingual or trilingual programs can effectively transfer to the second or third language the knowledge and strategies they acquired in the first language.” This is all the more important as the most common form of bilingual education adopted in sub-Saharan Africa is premised on the assumption that “when students develop oral and written language aptitudes and skills in African languages, they can re-utilize these in learning other languages as well as to acquire knowledge in the latter” (Alidou and Maman, 2004.). Halaoui (2004c) identifies two other challenges including (i) the difficulty of teaching reading in tone languages, and (ii) teaching arithmetic when there are differences between French and several African languages in the organization of numeral sets and by the fact that some African languages do not use the decimal system in counting but a base 5 system.

Countries considering adopting bilingual (or multilingual) education need also to be aware of the steps involved. These include mainly (i) language policy

24. Except for Wolof, Pulaar and Sereer. African languages are tone languages. Two words with the same spelling but pronounced differently are not exceptional in such languages. Reading therefore requires knowledge of context in most instances.
formulation; (ii) curriculum development, including textbooks, teacher guides, supplemental materials, and approaches and tools for assessing learning; and (iii) professional development for both prospective and practicing teachers.

Each of these steps poses particular challenges that must be addressed. For instance, a critical aspect of language policy is language selection. This can be a highly sensitive issue, with socio-political implications. To develop a curriculum in a language presupposes that the latter has a written code and the capacity to convey key ideas from the collective knowledge base of humanity. For some, if not most African languages, this entails substantial background work, before writing curricula, launching textbook development, production and distribution, and initiating teacher development. The number of languages has implications for costs of textbook development and production; and these can be high if mass production is precluded by the size of the target population. A multi-country strategy may be a wise option in this respect for languages that are spoken in more than one country, even when allowing for variation.\textsuperscript{25}

As far as teachers are concerned, a critical issue that several countries must face has to do with having a sufficient number of competent speakers of each of the languages selected.

While these are all formidable challenges, they should not halt ongoing experiences or discourage countries that are considering experimenting with the use of African languages as the medium of instruction, especially in the foundational years of the formal educative process.

\textbf{Pedagogical reforms: from teaching strategies to learning strategies}

The history of the curriculum in sub-Saharan Africa, with a few exceptions, has followed the same path as in countries of the North, the former colonial powers in particular. In most countries, programs focused on teaching encyclopedic type content with few links between different subjects and have been progressively replaced by programs that focus explicitly on pedagogical objectives. More recently, since the 1990s, we have seen wide-ranging support for the competency-based approach, both in the North and the South.\textsuperscript{26}

This approach, which does not call into question objectives and disciplinary

\textsuperscript{25} For instance, just keeping the same layout and illustrations can generate significant cost savings.

\textsuperscript{26} It should be noted that the competency-based approach was highly popular in the United States of America in the 1970s and 1980s.
content, has the advantage of encouraging the integration of disciplines and focusing on practical applications (CONFEMEN, 2001). However, “its actual application brings up numerous obstacles that have to be overcome: The concepts require clarification and need to be rendered operational; the situations and problems best adapted to different cultural contexts need to be devised; the assessment methods need to be reviewed. A vast pedagogical research and experimentation project must be undertaken if we are to get past the stage of talk and prepare study programs that reflect the competency-based approach” (CONFEMEN, 2001, pp. 31-32, translated).

“Giving priority to competencies,” according to the Quebec Education Ministry (MEQ), which adopted this approach, “means encouraging a different relationship to knowledge and refocusing on training people to think. The idea of competency indicates the desire to initiate the development of complex competencies starting at school, these competencies being essential for the individual’s subsequent adaptation to a changing environment. It assumes the development of flexible intellectual tools that can adapt to changes and encourage the acquisition of new knowledge. The concept of competencies used for the Training Program is defined as follows: A practical know-how based on the mobilization and effective use of a set of resources. […] Skills are complex and constantly developing. They go beyond simply adding or juxtaposing elements, and the degree of mastery of a skill can increase throughout schooling and beyond it” (MEQ, 2001, pp. 4-5, translated).

Clearly, this strategy has important implications for the other main components of the education system: (i) organization of schools and classes; (ii) textbooks, teachers’ manuals and supporting pedagogical material; (iii) the system and procedures for assessing achievement and for certification; and (iv) pre-service and in-service teacher education. In the African context, and in the light of the bilingualism recommended above, the question of the choice of languages for teaching/learning has to be added to the list. Curriculum reform is a huge undertaking. This must be borne in mind, especially the fact that it takes several years (between a decade and 15 years) and requires a significant volume of financial and human resources. Senegal’s experience is instructive in this respect (see Plante, 2004).

Whatever the direction taken, one of the essential conditions for the effectiveness of a curriculum is the synchronization between the program of study and

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27. For a critique of the competency-based approach, see Boutin and Julien (2000).
the other components. “Research shows that those who decide on education policy, textbook publishers and teachers often focus so much on the content to be covered or the learning activities that they lose sight of the objectives that should guide curriculum planning. [...] The goals and objectives of a curriculum are more likely to be attained if all the components of the curriculum (content areas, pedagogical methods, learning activities and assessment tools) are selected because we believe they are the means to help pupils achieve the overall goals and objectives” (Brophy, 1999, p. 14).

One of the criticisms leveled at African schools is that pupils do not learn how to learn or how to take initiative. Research on learning indicates that effective learning strategies, including meta-cognition, and study strategies are just as important as the content to be learned. They can and should be taught to pupils (Brophy, 1999; Ministère de l’Éducation du Québec, 2001; Vosniadou, 2001; Walberg and Paik, 2000) since, when mastered, they can be applied to other learning situations or to tasks to be performed. This is the condition that makes lifelong learning possible and enables learners to adapt to new situations. The curricula renewals underway within the scope of the EFA programs should take this into account and put an end to the encyclopedism that characterizes school programs in numerous countries. In concrete terms, putting an end to encyclopedism means moving from an approach focused on book knowledge to an approach based on learning strategies and the development of cross-cutting skills.

Reforms related to the organization and management of classes and student numbers

*Multi-grade classes.* Age-specific grouping of learners following curriculum grades sequentially is the dominant and most visible form of school organization in both developed and developing countries. As educational systems begin to reach out to the hard to reach children, after catering to the easy-to-reach, they need to face the reality of small, remote schools with sometimes very small class sizes. Multi-grade teaching stands as an effective response to this end, both pedagogically and in terms of human, financial and infrastructure resource management (CONFEMEN, 1999). In the same vein, Little (2001) argues, “if Education for All is to be achieved, then the establishment and continuation of schools with multi-grade classes must be encouraged. The policy question is not whether multi-grade schools should be closed and students accommodated in mono-grade schools. It is whether multi-grade schools can
be supported to offer learning opportunities for all in situations where the alternative is no access to education (p.486).”

In sub-Saharan Africa, several countries (e.g., Burkina Faso, Cameroon, Côte d’Ivoire, Guinea, Madagascar and Senegal) have adopted this approach. Overall, quantitative rationale, not pedagogical soundness, has motivated the decision to do so. Indeed, multi-grading is often presented as a strategy that helps increase access indicators to the extent that it allows annual intake in some rural areas and is a response to dwindling numbers of students in others due to migration or parental decision not to send children to school.

Just as the modalities for switching from L1 to L2 vary from one country to another (see above), so do the modalities for constituting multi-grade classrooms. In practice there is a range of modalities, from single teacher schools, where one teacher teaches all grades, to schools where only two grades are combined. Probably, the most commonly found combinations are as follows:

- Grades 1 and 2
- Grades 3 and 4
- Grades 5 and 6

Regardless of the grouping arrangement adopted, multi-grade teaching has the following as central features:
- Self-guided learning materials;
- Cooperative learning through group work; and
- Peer tutoring among children.

To make the most out of peer tutoring, the most commonly found combination might not be the best. Peer tutoring may be more productive when age and/or grade difference is bigger than this arrangement allows. Of course, one must recognize that this can place more demands on the teacher, as he or she must deal with a wider range of contents. The availability of self-guided learning materials can significantly alleviate such demands. These materials can also ensure a high level of time on task or content engagement time, despite an unavoidable reduction of contact time with the teacher in a multi-grade setting. As well, learning time can be ensured and its quality enhanced by cooperative learning through well-designed and targeted group work. Brophy (1999) states it as follows: “Co-operative learning promotes affective and social benefits such as increased student interest in and valuing of subject matter, and increases positive attitudes and social interactions among students who differ in gender, race, ethnicity, achievement levels and other characteristics. Co-operative learning also creates the potential for cognitive and meta-cogni-
tive benefits by engaging students in discourse that requires them to make their task-related information-processing and problem-solving strategies explicit (and thus available for classroom discussion and reflection). Students are likely to show improved achievement outcomes when they engage in certain forms of co-operative learning as an alternative to completing assignments on their own. [...] It is perhaps most valuable as a way of engaging students in meaningful learning with authentic tasks in a social setting” (pp. 27-28).28

For many sub-Saharan African countries achieving and maintaining quality Education for All will require paying more attention to the practice of multi-grade teaching. In fact, as Farrell (2002) argued, multi-grading “is not simply a second-best expedient for use when there are not enough children in a school catchment area to support age-graded schooling. It is, in and of itself, pedagogically superior to age-graded schooling; it matches much more closely what we now know about how children actually develop. It permits cross-age peer tutoring and continuous-progress learning” (Farrell, 2002, p. 259). In other words, similar instructional strategies can be adopted in the large, overcrowded classes that one finds in many urban areas.

Multi-grading can also be used to equalize as much as possible the number of students assigned to each teacher within a school. Take for example a school with the following enrollment pattern from grade 1 to grade 6: 100-70-50-35-20-25, for a total of 300 students with six teachers. It would make a lot of sense in such circumstances to combine grades 5 and 6 and reassign the grade 5 or grade 6 teacher to a second grade 1 class (with 50 students). One could even go further by placing 15 grade 3 students in grade 4 and 15 students of grade 2 in grade 3. Managing the student population this way could help improve quality significantly.29

The double-shift system. Double-shift schools emerged in the 1980s and 1990s as the solution to overcrowding of classes in urban areas. In practice, it means that a class is divided into two groups; the same teacher meets group A in the morning and group B in the afternoon. A variation on this strategy, in response to lack of facilities, consists in using the same classroom for two different


29. This kind of arrangement is quite common in the US, and parents never mind when their child is placed with a higher grade.
classes. In this case, the two classes have access to the classroom with their teacher half of the day. Contrary to multi-grading, double-shift arrangements (in particular those of the first kind) have been reported to have a negative impact on student learning (CONFEMEN, 1999; Kim, 1999). In her exploratory comparative study of instructional hours in primary education in West Africa, Kim for instance found that the double-shift system resulted in an average of 32.2% loss of instructional time, and that the gap between intended hours of instruction and implemented hours may be as high as 25% to 30%.

Table 6.2 Instructional time in double-shift classes

<table>
<thead>
<tr>
<th>COUNTRY</th>
<th>Standard Classes</th>
<th>Double Shift Classes</th>
<th>% difference</th>
</tr>
</thead>
<tbody>
<tr>
<td>Country</td>
<td>Hours</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Mali</td>
<td>888</td>
<td>645</td>
<td>37.7%</td>
</tr>
<tr>
<td>Guinea</td>
<td>747</td>
<td>585</td>
<td>27.7%</td>
</tr>
<tr>
<td>Senegal</td>
<td>675</td>
<td>547</td>
<td>23.4%</td>
</tr>
<tr>
<td>Côte d'Ivoire</td>
<td>754</td>
<td>580</td>
<td>30%</td>
</tr>
<tr>
<td>Burkina Faso</td>
<td>858</td>
<td>603</td>
<td>42.3%</td>
</tr>
<tr>
<td><strong>AVERAGE</strong></td>
<td><strong>784.4</strong></td>
<td><strong>592</strong></td>
<td><strong>32.2%</strong></td>
</tr>
</tbody>
</table>


It is evident from the data in Table 6.2 that students participating in double-shift classes are at a clear disadvantage compared to those who profit from an average of 200 hours more per year. This is critical, as actual (not intended) instructional time has been consistently reported to be a strong determinant of how much children learn at school (Brophy, 1999; Lockheed and Verspoor, 1991; Scheerens, 2000). Kim’s recommendation to consider double shifting as a temporary and transitional mean of increasing student enrollment makes a lot of sense in this respect. However, the phenomenon of large classes may persist for some time still. Learning to teach large classes may therefore be an alternative, promising solution. Burkina Faso, Cameroon, and Senegal have been experimenting with large-class pedagogy for several years but on a small scale.30 As already indicated, multi-grade teaching strategies can be equally effective in such circumstances. Little (2001) rightly argued that knowledge of multi-grade teaching strategies is needed by all teachers and not simply by those who are in charge of classes designated as multi-grade. This has obvi-

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30. Cameroon for instance reported on its experience in the framework of ADEA’s stocktaking exercise (see ADEA, 2001).
ous implications for teacher initial and continuous professional development programs and for teacher educators themselves: Multi-grade teaching should be part of the curriculum and pedagogy of teacher education. In particular, teacher education programs must develop teachers’ capacity to design curriculum, to manage classrooms, and to prepare and evaluate teaching materials (Catz, 2002). Programs must also help teachers develop a positive attitude toward multi-grading (Little, 1995).

Assessment and review of experiences in Africa
What trends emerge and what are the results of the reforms and adaptations of curricula that have been covered above? What overall directions can be deduced to adapt education to the needs and demands of the African context? What are the obstacles and risks that are slowing progress? The third part of this chapter attempts to answer these questions.

Among the reforms related to the purposes of education presented above, the reform related to environmental education (EE) is the only one that has been subject to systematic evaluation. The results are overall positive, and permanent adoption of this reform has begun. The ministers of education and the environment met in 1999 to review the Dakar declaration and concluded that states have shown a strong interest in carrying out the commitments made. This interest is shown, among other things, by the integration of EE in the curricula being renewed and in pre-service teacher education, and by the fact that EE has been taken into account in education policies (Ba and Tounkara, 2000).

The other reforms presented are too recent for an opinion to be formed, or they are difficult to evaluate using conventional approaches. However, they are all being adopted, except perhaps for the introduction of productive activities in primary schools. Restoring and maintaining peace are not really choices to be made but rather inevitable necessities for the development of the countries concerned. This is also valid for the fight against HIV/AIDS and concerns all countries. Productive activities are not imposing themselves in the same way. They would be less controversial if the pedagogical reasoning held sway over the economic and social and professional predestination and the (pre-) professionalization reasoning. Ethiopia’s experience is noteworthy in this respect. The main objective of the project in question is not to prepare young people for work in their area, but to raise their awareness of it through pedagogical processes. The integration of local knowledge in the content taught in schools
is the main objective of this project. Hopefully, the project will not stop at the pilot phase, like many others in the African educational landscape since the 1960s.

The results of linguistic reforms covered in this chapter are positive overall in several respects. In the light of these results, it is logical to ask why the use of African languages for teaching and learning is not more widespread in sub-Saharan Africa and why the phenomenon of never-ending experimentation continues. A number of obstacles and risks could explain this situation. The skepticism—of the elites in particular—concerning the capacity of African languages to convey science (universal knowledge) is the first obstacle. This stems from and is linked to the artificial opposition between African languages and foreign languages, whereas what is called for is the promotion of functional complementarity between them (Ndoye, 2003).

The second obstacle has to do with multilingualism in African countries being shown as an unwanted phenomenon in two ways. On one hand, the usual argument is that in such a context the choice of the language or languages to use in schools is a potential threat to national cohesion and social peace. On the other hand, it is argued that multiplying the number of languages of instruction brings huge costs, and the resources available are not sufficient for even the monolingual model to function. The case studies presented above (Burkina Faso, Mali, Niger, and Zambia) and the experiences of other countries (Namibia, Democratic Republic of Congo, and Zimbabwe) effectively counter these arguments. Adult literacy programs solved the multilingualism issue a long time ago at reasonable cost, and formal basic education could learn from this. In fact it does not mean imposing the African language but seeking and creating the conditions so that everyone begins learning in the language they speak to better approach learning the “official” language and successfully complete their schooling. In addition, micropublishing and the savings achieved by improving the internal efficiency of the education system (fewer grade repetitions and drop outs or expulsions) reduce the importance of the question of costs.

The third obstacle concerns the recruitment, training and deployment of teachers. Decentralization is a path towards a solution in this respect, in the sense that it enables the problem to be solved at the most relevant level (i.e.,

31. Over half of the region’s 39 countries continue to practice monolingual education in the colonial language (Komarek, 1997, quoted by Pillai, 2003).
the local level). Nonetheless, this obstacle remains a major one in several respects. First, as mentioned above, due to the monolingualism in force since the colonial era, it is in many cases difficult to find enough prospective teachers who have both the desired academic level and adequate mastery of African languages. Bilingual education would help solve this problem in the medium or long term. Second, bilingual education has implications for training programs (pre-service and in-service) for teachers. Generally, teacher educators are poorly or not at all prepared for teaching in African languages. The adoption of bilingual education thus requires action at this level and also in-depth changes in the training programs – a challenge in itself.

In the final analysis, the solutions to the obstacles reviewed will have a limited impact in the absence of a national environment favorable to African languages. This means a literate environment enabling regular access to information, continuous development of knowledge, use of public services and answers to everyday needs through reading and writing in these languages.

As far as pedagogical reforms are concerned, current discourse is dominated by the competency-based approach. Yet almost all countries are still at the discussion stage. Only Djibouti has made a move forward, but the experience is too recent for lessons to be learned from it. The other countries are still designing or preparing their competency-based curricula. The competency-based approach is a meaningful and even attractive one. Nevertheless, it is clear that this option holds constraints for the education system, teachers in particular. As far as the teachers are concerned, any innovation or reform that requires change in their classroom practices must take into account their current skill levels, or it will literally miss the target.

In terms of the organization and management of classes and student numbers, two reforms, in fact, innovations, have been reviewed: multi-grade classes and the double-shift system. From assessments carried out, by the PASEC in particular, it appears that, unlike double-shift systems, multi-grading does not have negative affects on students’ learning. Unfortunately, demographic pressure means that double-shifting attracts more attention than multi-grading, with the consequence that the pedagogical potential of the latter is not sufficiently exploited. The main obstacle to the large-scale adoption of the multi-grade classes is that they turn on its head the idea that most people, including school administrators and teachers, have of a “real” classroom. The demonstration of the pedagogical effectiveness of this form of class organization and management necessarily requires adequate teacher education, motivation,
and the setting up of the minimum conditions required for this type of class to function.

Given the commonalities between large-group instructional strategies and multi-grade teaching methods, pedagogical strategies used for multi-grade can also be used for overcrowded classes. Training all teachers in their use is an important priority in any attempt to improve instructional practice throughout the system.

The most compelling finding that emerges from this review is that of the potential of bilingual education. This education model has the advantage of fulfilling a number of expectations simultaneously: Pedagogical effectiveness, assertion of cultural identity through language, integration of local knowledge in school programs, highlighting the value of endogenous potential, social and cultural anchoring of young people in school and providing a gateway to the world through a foreign language they master better due to the literacy acquired in their mother tongue or first language.

At the organizational level, multi-grade classes appear to be a promising option in that they do not have a negative – on the contrary often even a positive – effect on learning, and they enable rationalization of the infrastructures and the use of teaching staff while improving access indicators. In addition, the pedagogical strategies that underpin them can be applied to contexts of large classes. Clearly, the initiatives currently being developed for a pedagogical approach specific to large groups, particularly in Senegal, Burkina Faso and Cameroon are worth pursuing.

**Conclusion**

The second part of this chapter focused particularly on the content of reforms and curriculum innovations. It is critically important to emphasize the process of reform or curriculum innovation. In fact, the approach to curriculum design and the approach to testing and generalization are factors that lead to success or failure. Plante’s (2004) contribution to the current study has much to teach in this respect. The establishment and successful operation of a partnership in multiple forms, the clarification of the roles and responsibilities of the different players and entities involved, the modulated participation of these players and entities, the realistic nature of expectations and the taking into account of the realities of classroom practice are the sine qua non for the success of any curriculum reform or innovation operation. In addition to these conditions,
two risks must be mentioned: *terminological vagueness* and *overloading* of school programs, the second element being a result of the tendency to not take classroom realities into consideration when preparing the curriculum, with each group of specialists defending their own corner.

The absence of the conditions listed above, participation in particular, brings a twofold risk: The risk of perceiving curriculum reform as “a purely political and administrative activity that can be carried out without the true participation of all those concerned. More seriously, the risk is that a narrow pragmatic vision will be adopted that will reduce the implementation of a curriculum reform, originally designed as a pedagogical activity that may have administrative consequences, to an administrative activity that may have pedagogical consequences” (Plante, 2004, p. 28; ADEA translation). In other words, the pedagogical should take precedence over the political and the administrative in any curriculum reform process. The success of such a process does depend, on final analysis, on the commitment of teachers and the support of families and communities. At the implementation level, it is teachers who make or break a curriculum. It is therefore in everyone’s interest that they are closely associated with any curriculum reform. Parents and other community members also have their say in the sense that it is the education and the future of their children that is at stake.

These lessons are of even greater importance if the reform is of a controversial nature. Linguistic reforms, bilingual education in this case, are the most obvious example. Nevertheless, these reforms are seen today as a critical step forward in revitalizing African schools, if we want them to become a true instrument for personal, social, economic and cultural development. A wealth of data is available for informed decisions to be made. Only the political will can fail at this stage!
Chapter 7. Breaking the mold: Teacher development for pedagogical renewal

By Martial Dembélé

Research evidence accumulated since the 1970s suggests that teaching is a strong determinant of student achievement (see for example Gauthier et al., 2004; Darling-Hammond, 2000; Lockheed and Verspoor, 1991). Yet, teaching in most classrooms in sub-Saharan Africa is reported to be ineffective: It places students in a passive role and limits their activity to memorizing facts and reciting them back to the teacher. It is described as rigid, chalk-and-talk, teacher-dominated, and lecture-driven (Kellaghan and Greaney; 2004; Maclure, 1997). There is substantial evidence that this kind of teaching does not help students develop conceptual understanding, critical thinking and problem-solving skills; that it merely fosters formulaic, rote learning. There can be little doubt that this kind of pedagogy is in large part responsible for the low levels of student learning as reported in Chapter 1.

The research literature also suggests that teacher effect on student achievement is both cumulative and residual (Sanders and Rivers, 1996). In a nutshell, this means that teacher effect not only adds up but also leaves long-term marks. Consequently, it is doubtful that an effective teacher can fully compensate for earlier negative impact on students caused by an ineffective teacher. These interrelated findings have critical implications for sub-Saharan African primary students in particular, as in a given year they are typically taught by the same teacher; for those who move up the grades with the same teacher, as is the case in some schools, the consequences could be dramatic if this teacher is ineffective. Practically, this means that successful completion of primary school and access to and success in secondary school may depend on whether or not the student had effective or ineffective teachers in the early grades.

This chapter takes its rationale from these findings. It is premised on two basic assumptions: First, unless teachers provide effective instruction and create

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32. Many of the ideas in this chapter have been developed in more detail in Dembélé and Miaro (2003).
a classroom environment conducive to learning, students will not achieve at high levels, even when essential material inputs are available and the curriculum is relevant and well-designed. This is particularly the case in sub-Saharan Africa, where sources of school-sanctioned knowledge and skills are less varied than in developed countries. Teachers play a central role in student learning in such a context. But, as in any context, one finds desirable and undesirable teaching practices. The chapter therefore explores instructional practices that are reported to be effective in African classrooms as well as in other parts of the world.

Second, knowledge of demonstrably effective instructional practices is a necessary but not sufficient condition for improving instructional practice. Without teachers who are able and ready to adopt and adapt such practices, successful quality improvement in education will remain an impossible dream. Evidence from industrialized countries suggests that students of teachers with no professional preparation for teaching learn less than students who have fully prepared teachers (Darling-Hammond and Post, 2000) and that more effective instructional methods are key to improving student learning (Stigler and Hiebert, 1999). Teacher education, both pre-service and in-service, is thus central to quality improvement in education. Consequently, the chapter also addresses the question of how in-service and pre-service teacher development programs can contribute to the adoption of desirable teaching practices.

**Visions of effective teaching practice**

That human beings learn by constructing knowledge is an accepted proposition among professionals of education (Bruner, 1966; Glaser, 1991; Tardif, 1997; Wood, 1998). There is also agreement that, besides a competent teacher, requisite conditions for learning include the relevance of what is to be learned and opportunities to learn it in a safe environment where there is a sufficient supply of teaching and learning materials, and where time is optimally used on task, and assessment is continuous (see for example, Scheerens, 2000; Joyce, 1997; Carron and Châu, 1996; Fuller and Clarke, 1994). The issue that divides educators has to do with how the process of knowledge construction is best supported in classrooms. Current discourse and practice are dominated by two main competing visions in this respect: open-ended versus more structured instruction.
**Open-ended instruction**

Proponents of open-ended instruction argue for participatory, more interactive, child-centered, discovery-oriented and adventurous pedagogy, with cooperative learning and inquiry as its central features. Based on various versions of constructivism, this kind of pedagogy tries to induce students to construct knowledge by inquiring into subject areas intensively (Ball, 1998; Chazan and Ball, 1995). “According to the constructivist approach, independent learning, meta-cognition (e.g., learning to learn), ‘active learning’, learning to model the behavior of experts (‘cognitive apprenticeship’) and learning from real-life situations (‘situated cognition’) should be emphasized, although the effectiveness of teaching and learning according to these principles has not been firmly established” (Scheerens, 2000, p. 51).

Gauthier *et al.* (2004) take Scheerens’ cautionary note further by providing evidence that this kind of teaching is not as effective as structured instruction, especially not for students from disadvantaged socio-economic backgrounds. Several researchers report that it is proving extremely difficult to implement open-ended instruction on a large scale, even in developed countries with well endowed education systems, where certain conducive conditions exist, including small class size, abundance of teaching and learning materials, a teacher corps with university education, etc. (see Cohen *et al.*, 1993; Elmore, 1996; Fullan, 1982 and 1991). The fact that different people interpret these practices differently adds to the implementation challenge. Designers and teachers may attach different or opposing meanings to the concept. For example, inducing students to construct knowledge by inquiring into subject areas does not necessarily imply child-centeredness, if the latter is construed as designing learning activities around the child’s interest. As well, one could argue that child-centeredness and interactivity do not necessarily imply open-endedness. Hopkins (2002) captured the issue well in his review of School Improvement Projects (SIP) supported by the Aga Khan Foundation in East Africa: “There are many concepts in education that generate passionate support, but, in practice, lack operational clarity. Child-centered learning is one of these concepts” (p. 280). On the one hand, according to Hopkins, it “most usually refers either to a particular ethos within a school or classroom that prizes individuality of the learner, that respects the current phase of their learning history, and that creates conditions within the school and classroom where the learner feels

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33. See Chapter 3 in Lockheed and Verspoor, 1991, and Chapter 2 in this paper for a discussion of these conditions.
accepted and secure. In simple terms, this approach to child-centered learning refers to a caring, accepting and happy school environment” (p. 280). On the other hand, “child-centered learning is more technical and precise insofar as it relates to cognitive development. This approach works within the broad parameters of developmental psychology and, consequently, views the child as an active learner and the teacher as the one who promotes learning skill and capability. The aim of the teacher working within this approach is to develop powerful learners who can respond successfully to tasks that they are set, as well as tasks they set themselves. The key point is that, within whatever context learning takes place, it involves ‘active construction of meaning’” (Hopkins, 2002 p. 281).

The programs supported by the Aga Khan Foundation appear to be exemplars of the first view of child-centeredness. For Farrell (2002), this is a rather limited version of “child-centered or activity-based” learning; but even moving that far from the traditional model (i.e., greater student participation in activities and group discussions) has been quite difficult. The evaluation of the Mombassa SIP, for example, showed that “the fidelity (closeness to ‘ideal’ child-centered practice) of teacher implementation remained highly variable in project schools [in the fourth year of the project].... The proportion of project-school teachers who did not engage pupils in activity-based learning tasks was... high (59%)” (Anderson and Nderitu, 2002, p. 171). Obviously, training alone does not suffice. According to Hopkins, educators who embrace a child-centered learning approach, be it of the first or second type, must meet two formidable interrelated challenges: Adopting changes in traditional measures of student learning constitutes the first challenge; the second challenge has to do with students’ own beliefs and approaches to learning. With respect to the first challenge, Hopkins concludes that, “there is little evidence from the case studies that the Aga Khan Foundation projects have either:

- Successfully demonstrated the power of constructivist teaching methods to improve the quality of student outcomes on traditional measures of student performance (such as national examinations); or
- Attempted to significantly alter local or national expectations and norms that define effective student learning in an East African context” (pp. 281-82).

Mali’s experience with Pédagogie Convergente is, in theory and in practice, an exemplar of the second view of child-centeredness. However, as discussed in Chapter 6, important challenges lie ahead in enlarging the scale of this innovation; having a sufficient number of competent teachers constitutes one of these
challenges. There are many other examples of school improvement programs or projects that claim to embrace child-centered, activity-based teaching and learning. These include the following, among others (Farrell, 2002):

- **Escuela Nueva program** in Colombia;
- **Non-Formal Primary Education program** of the Bangladesh Rural Advancement Commission (BRAC);
- **Escuela Nueva Unitaria program** in Guatemala;
- **Fe y Alegria schools** in Latin America;
- **Multi-grade programs** in Guinea and Zambia;
- **Community Schools** program in Egypt sponsored by UNICEF;
- **MECE Rural program** in Chile; and
- **Network of Education for Production programs** in Latin America.

As noted above, it is proving quite difficult to implement child-centered, active pedagogy as a desirable practice on a large scale. The main reason is that this kind of teaching goes against the grain, to the extent that it challenges what Tyack and Cuban (cited by Farrell, 2002) call a standard “grammar” of schooling (i.e., “a set of expected patterns we have historically constructed regarding what a ‘real school’ is. Anything that deviates substantially from that ‘real school’ or ‘grammar-of-school’ image will, [by Tyack and Cuban’s analysis] be resisted by teachers, parents and students” (p. 252). As far as teachers are concerned, it may be less an issue of resistance than one of preparedness. Indeed, teachers are typically unprepared and lack needed support from school heads and supervisors to espouse and enact such a practice. In fact, in most cases, the latter may not be better informed about child-centered pedagogy than the teachers themselves. The case of Namibia’s Basic Education Teacher Diploma is illustrative in this respect (see van Graan et al., 2004).

So are the Aga Khan Foundation-supported Dar es-Salaam Primary Schools Project (see Anderson, 2002), and Botswana’s University-Based Teacher Education Model in the framework of this country’s Primary Education Improvement Project (see Craig et al., 1998; Hopkins, 1997). In addition, success may depend largely, and perhaps paradoxically, on considerable structure in the programs or projects, the instructional materials and teachers’ guide.

The foregoing does not mean, however, that the idea of child-centered pedagogy should be abandoned. It is simply a call to be cognizant that implementation of such a pedagogy poses formidable challenges, even in contexts where the requisite conditions are in place. It should also be noted that, except for the Colombian *Escuela Nueva* and the Bangladesh Rural Advancement
Committee (BRAC) program, most of the above-listed alternatives are in their infancy and on a small scale. And while both of these two programs are applied in a large number of schools, their coverage is far from universal.\textsuperscript{34} Moreover, both use highly structured materials and teacher training and support to promote a child-centered pedagogy. In \textit{Escuela Nueva}, children are active, self-directed learners working with highly structured materials. BRAC works with much less qualified teachers and provides highly structured frequent training and directive supervision.

\textbf{Structured instruction}

Between “traditional” teaching and open-ended pedagogy, one finds proponents of direct instruction, characterized by structure and some directivity, and having mastery learning as guiding principle (Brophy, 1999; Doyle, 1987; Good and Grouws, 1977; Hopkins, 2002; Rosenshine, 1997a, 1997c, 1986a, 1986b; Rosenshine \textit{et al.} 1986; Scheerens, 2000; Walberg and Paik, 2000). According to Walberg and Paik (2000) the central features of this kind of teaching include: (i) daily review, homework check and, if necessary, re-teaching; (ii) presentation of new content and skills in small steps; (iii) guided student practice with close teacher monitoring; (iv) corrective feedback and instructional reinforcement; (v) independent practice in work at the desk and in homework with a high (more than 90 \%) success rate; and (vi) weekly and monthly reviews (p. 12). In his 1983 review of teaching behaviors most closely associated with student achievement gains, Brophy (cited in Hopkins, 2001, p. 83) similarly came to the conclusion that students learn more when teaching has the following features:

- \textit{Content coverage:} teachers cover more material;
- \textit{Time allocated to instruction:} teachers allocate available class time to academic activities;
- \textit{Engaged time:} a high proportion of class time is on task;
- \textit{Consistent success:} correct responses to questions and to written work at desk are high;
- \textit{Active teaching:} teachers spend most of their time actively teaching students rather than having them work on their own without direct teacher supervision;

\textsuperscript{34} BRAC for example employs 30,000 part-time teachers and operates 66,000 villages. Even so, it reaches fewer than 10\% of children of primary-school age (Watkins, 2000, p. 311).
- **Structuring information**: teachers structure information using such techniques as advance organizers, reviewing objectives, outlining content, signaling transitions between lesson parts, drawing attention to main ideas, and reviewing main ideas. Clarity of presentation and enthusiasm in presenting material are also associated with achievement gains;

- **Effective questioning**: questions are asked frequently and are relatively easy; waiting for responses, acknowledging correct answers and working with students who give partial or incorrect answers to give them a chance to improve their answers are all associated with achievement gain.

More recently, Boyer (2001) developed a cognitively guided version of direct instruction. He refers to it as *explicit teaching*. Its central features include advance organizers, modeling, guided practice, and independent practice. According to Boyer (cited by Gauthier et al., 2004), “explicit teaching involves making explicit to children the cognitive processes underlying the use of a skill or the accomplishment of a task.” In the area of reading for instance, explicit teaching proposes “activities and concrete procedures that foster the development of skills such as information selection, question analysis, formulation of hypothesis triggered by a comprehension gap, establishing relations between sets of data, drawing inferences, and self-questioning” (p. 45).

Gauthier et al. (2004) provide ample evidence that structured instruction, as summarized above, is more effective than open-ended pedagogy. This evidence shows that, especially with children from disadvantaged socio-economic backgrounds, one must first and foremost lay emphasis on learning that helps them develop their cognitive and affective skills. “When one attempts to do the opposite (i.e., to commence with the affective and the cognitive using discovery methods, as advocated by proponents of child-centered approaches), children from disadvantaged backgrounds are those whose educational success is jeopardized the most” (p. 40).

Gauthier et al. also call for prioritizing reading ability as a strong determinant of educational success and survival. They conclude with the following recommendation:

> Between the weaknesses of traditional teaching and the extremely high cost and intensive personal teacher commitment in discovery methods, we consider explicit teaching and direct instruction as a “juste milieu.” Its effectiveness as well as its efficiency have been demonstrated. It does not deviate too much from what teachers already know how to do but brings them to
do it better; it does not require sophisticated materials and can be adapted to large classes. [...] When it comes to instructional practices, we believe the wider the gap between existing teachers’ skills and what one wants them to learn, the higher the risks of failure. Various discovery methods are interesting but hard to master. In addition, as we have seen, their actual effectiveness is questioned. We therefore believe that it is more reasonable to opt for instructional practices that are simpler but whose effectiveness has been largely established (p. 82).

As opposed to child-centered, activity-based teaching and learning, the sub-Saharan African experiences available do not include examples of attempts to put in practice structured instruction or explicit teaching. Given what Gauthier et al. argue, one possible course of action may be to engage in experimenting with this kind of teaching.

**Bringing the visions together?**

The “juste milieu” that Gauthier et al. propose makes a lot of sense, especially in the context of sub-Saharan Africa, where large classes are a common reality, particularly in urban areas, and where the majority of teachers have on average ten years of general education (the quality of which is reported to be abysmally low), little or no professional preparation, and only episodic opportunities for further professional development. However, it may be more productive not to think about open-ended pedagogy and structured instruction in dichotomous terms. In other words, there must be room for both student-centeredness and teacher directivity in the teaching-learning process. As Scheerens (2000) put it,

*A straightforward comparison [of open-ended instruction] with more structured teaching approaches may be complicated, since constructivist teaching emphasizes different, higher order, cognitive objectives. Moreover, structured versus “active” and “open” teaching is probably better conceived as a continuum of different mixes of structured and “open” aspects, rather than a dichotomy* (Scheerens, 2000, p. 51).

Instructional practice in Japan is insightful in this respect. The work of scholars such as Fernandez (2002), Le Tendre (1999), Lewis (1995, 2002), Sato (1992), Sato and McLaughlin (1992), Stevenson and Stigler (1992), Stigler and Hiebert (1999), and Tobin et al. (1989) has brought worldwide attention
to Japanese education. There is a convergence of viewpoints among these scholars that the kind of teaching that one finds in Japanese classrooms is a key explanatory factor of high student achievement in that country. Its central features are as follows: It is both student-centered and teacher-directed; anticipating children’s thinking is prominent in it, especially in mathematics and science; it strives to help students attain conceptual understanding of subject matter.

Ultimately, it may well be that the heart of the matter is not child-centeredness or teacher direction per se but learning-centeredness, i.e., how best to help children learn more than unconnected facts, how to create intellectually challenging learning situations for them. For sure, teaching as mainly information delivery is not effective in this respect. As Hopkins (2001) put it, “teaching is more than just presenting material, it is about infusing curriculum content with appropriate instructional strategies that are selected in order to achieve the learning goals the teacher has for her students” (p. 73). In other words, variety in strategies may be the key for teaching that helps all students achieve learning goals. This requires that teachers have a repertoire of strategies that they use selectively, according to learning goals and the topic(s) being covered. Joyce et al. (1997) is helpful in this respect (Table 7.1 on page 176).

Effective teachers understand how children learn, are attuned to student thinking and learning, have high expectations for and care about all of their students, create and sustain an effective learning environment and community, plan regularly for instruction, use instructional time optimally, seek the active participation of students in learning, encourage them to share responsibility for their own learning and help them do so, give frequent homework, carry out classroom assessment frequently and provide feedback, and reflect on their teaching. Most importantly, they try to build bridges between their sophisticated understanding of subject matter and their students’ developing understanding and adapt instruction to the variations in ability and background presented by their students. This requires what Shulman et al. have termed pedagogical content knowledge (PCK) or knowing subject matter from a pedagogical perspective (Shulman, 1986, 1987; Wilson, Shulman and Richert, 1987). Shulman (1986) defines PCK as a special kind of knowledge that distinguishes teachers from lay people and other educators. It includes “for the most regularly taught topics in one’s subject area, the most useful forms of representations of those ideas, the most powerful analogies, illustrations, examples, explanations, and demonstrations – in a word, ways of representing and formulating the subject
that makes it comprehensible to others” (p. 9). Developing this special kind of knowledge is therefore an important part of the agenda of teacher education.

### Table 7.1  A selection from the four families of models of teaching

<table>
<thead>
<tr>
<th>Model</th>
<th>Developer (redeveloper)</th>
<th>Purpose</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Information processing models</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Inductive thinking (classification)</td>
<td>Hilda Taba (Bruce Joyce)</td>
<td>Development of classification skills, hypothesis building and testing, and understanding of how to build conceptual understanding of content areas.</td>
</tr>
<tr>
<td>Concept attainment</td>
<td>Jerome Bruner Fred Lighthall (Bruce Joyce)</td>
<td>Learning concepts and studying strategies for attaining and applying them. Building and testing hypotheses.</td>
</tr>
<tr>
<td>Advanced organizer</td>
<td>David Ausubel (and many others)</td>
<td>Designed to increase ability to absorb information and organize it, especially in learning from lectures and readings.</td>
</tr>
<tr>
<td>Mnemonics</td>
<td>Michael Pressley Joel Levin (and associated scholars)</td>
<td>Increase ability to acquire information, concepts, conceptual systems and meta-cognitive control of information processing capability.</td>
</tr>
<tr>
<td>Social models</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Group investigation</td>
<td>John Dewey Herbert Thelen Shlomo Sharan Rachel Hertz-Lazarowicz</td>
<td>Development of skills for participation in democratic process. Simultaneously emphasises social development, academic skills and personal understanding.</td>
</tr>
<tr>
<td>Role playing</td>
<td>Fannie Shaftel</td>
<td>Study of values and their role in social interaction. Personal understanding of values and behavior.</td>
</tr>
<tr>
<td>Structured social enquiry</td>
<td>Robert Slavin and colleagues</td>
<td>Academic enquiry and social and personal development. Co-operative strategies for approaching academic study.</td>
</tr>
<tr>
<td>Personal models</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Non-directive teaching</td>
<td>Carl Rogers</td>
<td>Building capacity for personal development, self-understanding, autonomy and esteem of self.</td>
</tr>
<tr>
<td>Behavioural models</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Direct teaching</td>
<td>Thomas Good, Jere Brophy (and many others)</td>
<td>Mastery of academic content and skills in a wide range of areas of study.</td>
</tr>
</tbody>
</table>

Source: Joyce et al. 1997, Chapter 2
Teacher development for pedagogical renewal
Regardless of what a country adopts as desirable instructional practice(s), be it direct/explicit instruction or child-centered, activity-oriented pedagogy, the availability of a corps of competent teachers stands as a condition sine qua non for successful implementation. In the current context of calls for pedagogical renewal in order to achieve universal primary education (UPE) that is equitable and of acceptable quality in sub-Saharan Africa, this is one of the critical issues and challenges that most countries need to face. Verspoor (2001) argued the point as follows: “Many countries will have to reevaluate pre-service and in-service training. Teacher training can no longer be perceived as an extension of secondary education, only loosely connected to rural classroom conditions and practice. In-service training cannot continue to be an event that teachers participate in for a few days every 5-10 years” (p. 39).

The issues
“Improving teacher status, morale and professionalism” was adopted as one of the twelve main strategies for achieving the objectives set by the Dakar summit. Obviously, the implementation of this strategy poses different challenges to different countries in sub-Saharan Africa, as a function of the developmental stage of their educational system, the situation of the labor market and the economy. The sheer number of teachers needed to achieve UPE (see Chapter 1) makes the challenge a formidable one, not only from the perspective of the financial resources that this will require but also from the perspective of human resource availability; for even if financial resources abound, how to attract and retain talented individuals in the teaching profession remains an issue. This is especially true in a context where the profession’s image has been adversely affected by a set of interconnected factors: deteriorating working and living conditions due to more than a decade of economic hardships and structural adjustment, widespread dissatisfaction with the current situation of schooling (and with teachers by extension), and massive changes in the composition of the profile of the teaching force. Redressing this image and responding to the changes in entry profile and initial training stand as an important strategic direction toward UPE. This is all the more important insofar as it influences an education system’s capacity to attract and retain academically strong and motivated people in the teaching force. It is important

35. Note that this is not an issue in Sub-Saharan Africa only. All over the world, the teaching profession does not, on the whole, attract the best and brightest. In many ways, the challenge of teacher education is to prepare ordinary people to do extraordinary things!
as well because experience counts in teaching (Avalos, 1992; Avalos and Had-
dad, 1981); and experience is closely linked to age (Husén, Saha and Noonan, 1978). The proportion of teachers under 30 years of age is reported to be very high in the least developed countries (Siniscalco, 2002), more than two-
hirds of which are sub-Saharan African countries. In Burkina Faso, Cape Verde and Ethiopia, for instance, the proportions varied between 55 and 65% (Siniscalco, 2002). Relative youth, coupled with contract teacher status, may result in high attrition rates and staff instability. In addition, it may have cost implications as it usually implicates more supervision and professional support in the early years of a career; and if this career is prematurely interrupted by attrition or death (due increasingly to HIV/AIDS), the investment may be considered lost.

To sum up, the dual challenge of quantitative expansion and quality improvement of education presents itself in a similar way as regards the teaching force, which needs to be both improved and expanded in size. Reconciling the need to deploy large numbers of competent teachers with the imperative of financial sustainability is the dilemma to be managed. As argued at the beginning of this Chapter and in Chapter 2, teaching and by extension teachers constitute a strong determinant of student achievement; but at the same time, teachers’ salaries constitute the single most important item in educational expenditures, reaching two-thirds or more of education budgets in most countries. The question therefore is: How best to prepare teachers for teaching and provide for their further development in service, in a financially sustainable way?

Teacher development: a conceptual framework

There are no clear-cut, definitive answers to this question. In fact, there may never be such answers, as schooling, teaching and teacher education must, in principle, adapt to societal changes. However, the literature is replete with useful conceptual frameworks for thinking about and designing teacher education. As well, the literature contains promising practices that can inspire. From a conceptual perspective, what we know can be stated in a nutshell as follows:

36. The group of least developed countries includes 45 countries, according to UNESCO’s classification. Thirty-three (33) of them are in SSA, including Angola, Benin, Burkina Faso, Burundi, Cape Verde, CAR, Comoros, Democratic Republic of Congo, Djibouti, Eritrea, Ethiopia, The Gambia, Guinea, Guinea-Bissau, Equatorial Guinea, Lesotho, Liberia, Madagascar, Malawi, Mali, Mauritania, Mozambique, Niger, Uganda, Rwanda, Sao Tome and Principe, Sierra Leone, Somalia, Sudan, Tanzania, Chad, Togo, and Zambia.
• Learning to teach involves the dual task of constructing a practice and a professional identity. In more practical terms, it entails learning to accomplish the central tasks of teaching, and learning the professional norms and ethics associated with desirable practices. Notwithstanding the fact that desirable practices in teaching are context-bound, the central tasks of teaching include planning for instruction, managing instruction (including the learning environment), and assessing student learning. Each of these tasks can be further broken down and associated with particular aspects of “what teachers need to know, care about, and be able to do in order to promote substantial learning for all students” (Feiman-Nemser, 2001, p. 1016).

• Constructing a practice is not a one-time event, hence the need for opportunities to learn as one practices. In fact, given the ever-changing nature of schools and teaching, one must periodically reconstruct one’s practice. But the reconstruction of practice is hard because it requires changes in deep-rooted ideas that form the basis of one’s practice. This has implications for in-service teacher education beyond the early years (Ball, 1988; Cohen, 1988; Craig et al., 1998; Day, 1999; Elmore, 1996; Hargreaves and Fullan, 1992; Lieberman and Miller, 1979, 1992 and 2001; Ross, et al., 1992; Thompson and Zeuli, 1999).

• Constructing a professional identity or learning the professional norms and ethics associated with desirable practices requires being in a community of practice and being acculturated into that community (Britton et al., 2003; Feiman-Nemser, 2001; Gallimore et al., n.d.; Martinet et al., 2001; Grant et al., 1996; Lave, 1991). This also has implications for teacher education. In particular it implies thinking differently about practical experience at the pre-service level; as well, it makes a case for structured induction.

Based on a broad review of the literature and the evaluation of various programs, Craig et al. (1998) argued for seeing teacher development as “a continuum of learning, with teachers located at various places along the continuum” (p. 1). Feiman-Nemser (2001, p. 1050) provided a useful framework that operationalizes the idea of a continuum of learning to teach (see Table 7.2 on following page):
### Table 7.2  Central tasks of learning to teach

<table>
<thead>
<tr>
<th>Pre service</th>
<th>Induction</th>
<th>Continuing professional development</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Examine beliefs critically in relation to vision of good teaching</td>
<td>1. Learn the context – students, curriculum, school community</td>
<td>1. Extend and deepen subject matter knowledge for teaching</td>
</tr>
<tr>
<td>2. Develop subject matter knowledge for teaching</td>
<td>2. Design responsive instructional program</td>
<td>2. Extend and refine repertoire in curriculum, instruction, and assessment</td>
</tr>
<tr>
<td>3. Develop an understanding of learners, learning, and issues of diversity</td>
<td>3. Create a classroom learning community</td>
<td>3. Strengthen skills and dispositions to study and improve teaching</td>
</tr>
<tr>
<td>4. Develop a beginning repertoire</td>
<td>4. Enact a beginning repertoire</td>
<td>4. Expand responsibilities and develop leadership skills</td>
</tr>
<tr>
<td>5. Develop the tools and dispositions to study teaching</td>
<td>5. Develop a professional identity</td>
<td></td>
</tr>
</tbody>
</table>

Source: Feiman-Nemser (2001)

This task-oriented framework forms a practical agenda for both teachers and teacher educators. Feiman-Nemser (2001) proposes also a set of essential elements of well-designed pre-service teacher education programs, including: (i) **conceptual coherence**, (ii) **purposeful, integrated field experiences**, and (iii) **attention to teachers as learners**.\(^{37}\) At the induction phase, this includes (i) **appropriate assignments**, (ii) **a developmental stance, time frame, and curriculum**, (iii) **integration of assistance and assessment**, (iv) **a strong mentorship component**, and (v) **partnerships and collaboration**. Finally, essential elements of well-designed programs for teacher development beyond the early years include: (i) **serious talk about teaching, learning, learners and other aspects of schooling as a medium of professional development**, (ii) **professional communities of practice**, and (iii) **grounding in the particulars of teaching and learning**. It may be difficult for a given program to have all these elements, but they provide helpful guidance for designing opportunities for teacher learning at each phase of the learning-to-teach continuum.

One of the central tasks of learning to teach that deserves particular attention but that is often neglected in teacher education programs is the first task at the pre-service stage. **Analyzing beliefs and forming new visions** is based on the

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37. See Craig et al. (1998) for a comparable set of «essential elements of coherent and successful [pre-service] teacher education programs (pp. 60-63). They also provide a 64-item comparative list of «more and less effective teacher education strategies in developing countries» (pp. 147-151).
“well established fact that the images and beliefs which pre-service students bring to their teacher preparation influence what they are able to learn” (Feiman-Nemser, 2001, p. 1016). In other words, the construction of practice can be said to begin well before formal teacher preparation (see also Ball and McDiarmid, 1990; Calderhead and Robson, 1991; Craig, et al., 1998; Evans, 1999; Lortie, 1975; Nemser, 1983). Consequently, prospective teachers’ entering beliefs must be part of the curriculum of teacher education. In fact, this first task is relevant as well for experienced teachers engaged in learning new practices, as most of them have been taught and must have been teaching in ways that are very different from the kind of practices that are currently advocated by reformers as desirable. According to Thompson and Zeuli (1999), simply getting experienced teachers to internalize and act upon the fact that what is called for is not helping students learn to think but making them think to learn is a major challenge in in-service teacher education.

Developing tools to study teaching is also a task that is not often well accomplished in teacher education programs. It involves developing skills of observation, interpretation and analysis and can “foster norms for professional discourse such as respect for evidence, openness to questions, valuing of alternative perspectives, a search for common understandings, and shared standards” (Feiman-Nemser, 2001, p. 1019). The rationale for this task can be traced back to Dewey’s conception of reflection – a conception that was popularized in the early 1980s by Schön (1983, 1987) as reflective practice, and that then caught the imagination of the teacher education community (see for instance Clift, et al., 1990; Loughran, 1996). In Dewey’s view, if teachers are to foster student growth, they must be students of both subject matter and “mind activity.” Dewey took seriously “the injunction that teachers should be engaged in genuine intellectual activity and sought ways to involve them in research investigations. [His] notion of the classroom laboratory placed the teacher squarely in the center of efforts to understand educational practice and develop educational theory” (Ross, et al., 1992, p. 11).

One may think that the foregoing is beyond the reaches of developing countries, especially sub-Saharan African countries. This is not totally the case as it appears in what follows, notwithstanding the challenges encountered and shortcomings reported.

Reforming pre-service teacher education
The pre-service education of primary school teachers in most sub-Saharan
African countries has been criticized as being overly academic and theoretical in nature, ineffective and costly. Its length – two to four years beyond tenth or twelfth grade – has also been questioned. Such criticism is not new. It has simply been heightened recently by the drive towards quality universal primary education in a resource-scarce context. Some countries have had to recruit teachers with less than a tenth-grade education equivalent and place kids in their charge, with no professional preparation and ongoing support. This is certainly not a commendable move. Others have maintained pre-service teacher education but reduced its length so much that designing a worthwhile program is practically impossible. Still others have re-evaluated their programs and come up with radically different models or improved existing programs. Guinea’s new pre-service teacher education program is a case of a radically different model (Box 7.1).

This program holds promise in terms of both effectiveness and efficiency, insofar as it manages to provide in a shorter period of time and at lower unit costs teachers who are reported to be as effective as graduates from previous models. The program appears responsive to Feiman-Nemser’s set of essential elements of well-designed pre-service teacher education programs. Efforts deployed in the program to make field experiences formative are particularly noteworthy. In terms of duration, the program reflects Lockheed and Verspoor’s (1991) argument for recruiting teachers with more general education and providing them with a shorter practice-oriented pre-service training.

An issue that needs urgent attention, yet is beyond the reach of program designers, has to do with a career plan for contract teachers, promised since the inception of the program but not yet developed. Other issues that need attention include difficulties encountered in implementing practice teaching in associated schools and reflective practice on the one hand, and lack of preparation of prospective teachers for the reality of large classes, double shifts, multi-grade teaching and lack of instructional materials on the other hand.

The issue of a career plan for contract teachers is one that several other countries face. For instance, Burkina Faso, Chad, Cameroon, Mali, Niger, Senegal, Togo, and other countries are also having to resort to contract, volunteer or community teachers, in response to teacher shortage and economic hardships. This category of teachers is likely to outnumber regular teachers rapidly (they may already have in some cases), as countries strive to achieve UPE by 2015. It is important to think prospectively about how to deal with the consequences of this unavoidable situation, including, among others, the changing
Box 7.1. Pre-service primary teacher education reform in Guinea

From 1992 until 1998, Guinea recruited its prospective primary teachers among grade 12 students and provided them with a three-year program that was principally focused on content knowledge and provided only limited instruction in pedagogical knowledge and educational psychology. Student teaching was carried out in the cozy context of the demonstration school attached to each normal school. The ratio of student teachers to normal school teachers was as low as 10/1 on average, which resulted in high unit costs and low outputs in terms of trained teachers. It was in the context of a projected shortage of 2,000 teachers for the 1998-1999 school year that Guinea, with funding from the World Bank and technical support from the University of Quebec, designed a two-year model based on the German dual system of professional training, and conceptually oriented by active pedagogy, learning-centeredness, reflective practice, and socio-constructivism. The challenge was to provide the country with 6,000 contract teachers in three years and at lower unit costs while preserving quality.

Minimal entry level was set at grade 11. The first year of the program consists of coursework at the École normale d’instituteurs (ENI) (focused on the teaching of the basic subjects such as French, mathematics, science and technology, and humanities, as well as on educational psychology and learning assessment). The year of coursework is interspersed with periods of student teaching in specially selected ordinary schools. Courses at the ENI are taught by the normal school teachers and periods of student teaching are supervised by pedagogical advisors in collaboration with the host/mentor teacher and school head. The second year is a school-year-long student teaching experience where the prospective teacher assumes full responsibility for a classroom. During this year, he or she still receives support from a pedagogical advisor as well as a mentor teacher. Several student teachers are placed in a given school so that they can support each other as well as engage in peer socialization.

The quantitative objective was met beyond expectations, as the program delivered 7,612 new teachers (37% of whom are women) by June 2003. Put differently, the program delivered 522 new teachers per year, compared with less than 200 previously. The unit cost is estimated to be 1,484,288 Guinean Francs, or approximately US$677. Beyond these figures, the graduates of the program are reported to be at least as good as graduates of previous programs. This assertion is based on an evaluation conducted in 2002 by the Programme d’analyse des systèmes éducatifs de la CONFEMEN (PASEC). Teacher effectiveness was measured by the student scores on two written tests (a French test and a mathematics test) administered to a national sample of 2,880 grade 2 and grade 5 students at the beginning and end of the school year. The results of the analysis of student test data revealed the following:

- Fifth grade students taught by the graduates of the new program (FIMG) scored higher than students taught by graduates of former teacher education programs.
- The reverse is obtained in grade 2, even though the scores of students taught by FIMG graduates are very close to the scores of students taught by graduates of the previous ENI model.
- But overall, students taught by FIMG graduates performed better than students taught by graduates of non-FIMG graduates.
- Interestingly, students taught by the second FIMG cohort scored higher than students taught not only by the first FIMG cohort but also by graduates of the previous programs, which suggests that the new program is gaining in effectiveness.

Source: Diané et al. (2004)
composition of the teaching force and the potentially harmful instability of the teaching staff in many schools, especially in areas where there are competing job opportunities. In this respect, the experience of Senegal is worth looking at. This country has since the mid-1990s resorted to volunteer teachers to face a severe teacher shortage. Initially, there was no career plan for these teachers, many of whom had completed three or four years of higher education. Pressure from various stakeholders, including the critical mass of volunteer teachers themselves, led to the establishment of a career ladder. This retention incentive has financial, administrative as well as legal implications. How these implications will be handled in the long run remains an open question. The point here is that the hiring of contract, volunteer or community teachers is not a panacea to the problem of teacher shortage and to the financial burden that teacher salaries place on the education budget.

Uganda is another country that has revamped its teacher education program and apparatus (Box 7.2.). In 1993, after an extensive education sector review and consultations with key stakeholders that began in 1987, Uganda launched its Primary Education Reform Program (PERP). This program was designed to: (i) increase access to quality learning opportunities; (ii) improve school management and instructional quality; and (iii) strengthen planning, management and implementation. The Teacher Development and Management System (TDMS) was set up to contribute to the achievement of the first two objectives of the PERP. Among the issues to be addressed by this system were: high attrition rates among teachers, the presence of a large number of unqualified teachers (40-50%) in the system, the demoralization of the teaching force due in part to low salaries, low attractiveness of the teaching profession, an inadequate human and material base of Primary Teacher Colleges (PTCs), and PTCs’ reliance on an overly academic curriculum.

A related outcome of the implementation of TDMS worth highlighting is that it has improved the human resource base of the Core-PTCs. In the early 1990s, PTCs were under-staffed, and the tutors in post were mainly under-trained and worked part time. Under the TDMS, a network of Core-PTCs and associated Coordinating Centers has been created. Tutor training wings have been added to two Core-PTCs to specifically train tutors for deployment at Coordinating Centers. As a result, these institutions are now staffed with a large team of well-trained tutors who have been specially inducted to implement both pre-service and in-service teacher education programs. In sum, the country now has a sustainable pool of qualified teacher educators.
Box 7.2. Uganda: Improving teacher development and management

TDMS is a primary teacher training delivery mechanism centered on a reformed Primary Teachers’ Training College called a Core Primary Teachers’ College (Core-PTC). In terms of content, it is important to note that (i) the teacher education curriculum was revised to align it with the primary school study programs, and (ii) pre-service and in-service teacher education were integrated for uniformity and effectiveness. A total of 23 Core-PTCs were established, and each of them has two departments, namely the outreach department and the traditional pre-service department. The pre-service department runs the Primary Teacher Education (PTE) two-year residential course for prospective teachers recruited at O Level and above, and a three-year, on-the-job training course intended to upgrade untrained and under-trained teachers. The pre-service course leads to the award of a PTE Grade III Certificate, a minimum requirement for teaching in primary schools in Uganda. The outreach department employs a combination of distance education and short residential face-to-face sessions during the holidays to deliver in-service training and professional support for all serving teachers, head teachers, outreach tutors, education managers (particularly district inspectors of schools), school management committees, PTAs, and community mobilizers. Head teachers undergo a special one-year certificate course in basic management skills. It is important to note here that the outreach component had no predecessor.

The outreach programs are implemented through a network of coordinating centers, each of which coordinates a cluster of an average of 22 outreach schools. One school in each cluster is selected to serve as a coordinating center school. The coordinating center tutors (CCTs) are provided with motorcycles and/or bicycles to facilitate their mobility. They are expected to visit each outreach school for at least half a day each month. They also relate with their local communities through Coordinating Center Committee meetings and are in regular contact with their respective District Education Offices. The implementation of the program, especially the TDMS, is reported to have boosted teachers’ morale, promoted equity in the distribution of qualified teachers across the country, and revitalized the primary teaching profession in Uganda by:

• Restoring the status and integrity of teachers through training, continuous professional support, targeted incentives and better management of the teacher payroll;
• Increasing the output and supply of qualified teachers (the percentage of unqualified teachers has decreased by half from about 50% in 1993 to 25% currently);
• Ensuring a fairly equitable distribution of primary teachers across the country through implementation of a school staff ceiling formula – a system that has provided a framework for systematic staffing of primary schools and that has been used to determine the annual recurrent budget for the primary teachers wage bill and to detect “ghost teachers”;
• Improving the welfare of teachers by up-grading the salaries of qualified teachers from Ug. Shs. 11,000 in 1992-93 to Ug. Shs. 105,000 presently, representing a ten-fold increase in nominal terms over a period of ten years; and
• Providing incentives for untrained and under-trained teachers to upgrade to the Grade III Certificate.

Source: Eilor et al., 2004
This is an important outcome insofar as the quality of teacher education depends in part on the quality of those who teach teachers. This is an issue that other countries need to tackle, especially those that do not have a formal cadre of teacher educators per se but appoint inspectors and pedagogical advisors – in some cases former secondary school teachers – as teacher educators. Just as being a good teacher is a necessary but insufficient condition for being a good mentor of novice teachers (Dembélé, 1995; Feiman-Nemser and Parker, 1993, 1992; Feiman-Nemser et al., 1992), being an inspector or a pedagogical advisor does not automatically qualify one as a teacher educator. What this suggests is that countries need to be mindful not only about teachers, but also about the people who teach teachers and those who teach teacher educators. Therefore a key component of teacher development programs will be the strengthening of individual as well as organizational capacity in the higher education institutions in charge of preparing teachers and other education personnel, including the Faculties of Education, Écoles normales supérieures, and Higher Institutes of Education.

As indicated earlier in this chapter, it is proving extremely difficult to implement child-centered pedagogy on a large scale. Botswana and Namibia are two of the few countries that have attempted to do so. Tabulawa (1998, 1997) reflects on the “disappointing results” in Botswana (see also Craig et al., 1998). As reported by van Graan et al. (2004), the results of Namibia’s pre-service and in-service Basic Education Teacher Diploma (BETD) programs are at best mixed. However, what is striking and remarkable about these programs is the strong link that the program designers have tried to establish between teacher education and school curriculum reform. The BETD programs are also commendable for attempting to help teachers develop the tools to study teaching. In a nutshell, the Namibian case is a good example of system coherence, something that is not present in many sub-Saharan African countries. As a matter of fact, in many cases, teacher education does not reflect at all the curriculum and instructional practices that future teachers will encounter in schools, let alone ongoing educational innovations. Teacher education does not influence curriculum nor does teaching in schools either. The mutually influential relationship between schools and teacher education is clearly an area of needed improvement.

Continuous professional development
“Recognizing the inevitable limitations of pre-service preparation provides an important justification for induction programs. Educators still have to figure
out how to help novices connect the ‘text’ of their pre-service program to the ‘contexts’ of contemporary classrooms. New teachers have two jobs – they have to teach and they have to learn to teach. No matter how good a pre-service program may be, there are some things that can only be learned on the job. The first encounter with real teaching occurs when beginning teachers step into their own classrooms. Then learning to teach begins in earnest” (Feiman-Nemser, 2001, p. 1026). Yet programs designed to assist entry into the profession are a virtually absent phenomenon in sub-Saharan Africa. Lesotho is one of the few countries that attempted to implement a formal teacher induction program. The program was eventually phased out because of its unsustainable cost. But induction, as a critical phase in a teacher’s career – a phase of development or consolidation of professional identity and of commitment to teaching – need not be a luxury for sub-Saharan Africa. “Appropriate assignments” – one of the essential elements proposed by Feiman-Nemser (2001) – are arguably within reach. School heads can see that beginning teachers get assignments where they are most likely to succeed. This means assignments that can be handled at a level appropriate to their developmental stage. As well, school heads can restructure the school timetable so that beginning teachers have opportunities to consult and collaborate with experienced colleagues on a periodic but regular basis. Of course this requires that schools have some autonomy in how they use time (see Chapter 10).

Restructuring the timetable for teacher consultation and collaboration is equally effective for teacher learning and development beyond the early years. In fact, this can serve the dual purpose of assisted entry for beginners and continuous professional development for experienced teachers. This is all the more important, as teacher learning beyond the pre-service years is reported to be most enhanced when professional development (i) is a team rather than an individual effort, (ii) focuses on what teachers feel they need, with priority given to the teaching of basic subjects, and (iii) is conducted in or close to the classrooms of participating teachers, with extensive practice, follow-up, and formative evaluation as well as sufficient material support and outside expertise provided in a non-directive manner (Craig et al., 1998; Colletta and Perkins, 1995; Darling-Hammond and Sykes, 1999; Day, 1999; Elmore, 1996; Fullan, 1982; Hargreaves and Fullan, 1992; Lieberman and Miller, 1999; and McLaughlin, 1991).

In general, continuous development in most sub-Saharan African countries has been characterized by the one-size-fits all, one-shot, top-down model. In
addition, it has been a fragmented enterprise, with no guiding policy. More recently, however, programs that exhibit the above-listed features of enabling teacher continuous professional development have been emerging and increasing in number. The School Improvement Projects supported by the Aga Khan Foundation in East Africa are illustrative in this respect (see Anderson, 2002); so are Guinea’s small grants program for teacher-led professional development and school improvement projects (see Diallo et al., 2001 and Schwille et al., 2001), USAID-supported school Self-Assessment System in Namibia (see van Graan et al., 2004), Uganda’s TDMS (see Eilor et al., 2004), Zanzibar’s Teacher Resource Centers (see Abdulla et al., 2004), etc. This appears in line with the move toward decentralization and school-based management. It is a promising development to the extent that the anticipated expansion of most education systems in the region will rule out centrally delivered professional development for large numbers of teachers. In addition, the growth of the teaching force will most likely exacerbate the already insufficient district level professional support to schools and teachers. This provides further justification for school-based teacher development.

With respect to school-based teacher development, there is much to learn from China (Paine, 1990; Paine and Ma, 1993) and Japan (Fernandez, 2002; Lewis, 1995; 2002; Sato, 1992; Sato and McLaughlin, 1992; Stevenson and Stigler, 1992; Stigler and Hiebert, 1999). In both countries, norms of collegiality and collaboration permeate teachers’ work. In particular, the Third International Mathematics and Science Study (TIMSS) has brought much attention to Japan’s approach to the improvement of classroom teaching. According to Stigler and Hiebert (1999):

> Japanese educators have instituted a system that leads to gradual, incremental improvements in teaching over time. The system includes clear learning goals for students, a shared curriculum, the support of administrators, and the hard work of teachers striving to make gradual improvements in their practice. Japan has given teachers themselves primary responsibility for the improvement of classroom practice. Kouaikenshuu is the word used to describe the continuous process of school-based professional development that teachers engage in once they begin their teaching career... Participation in school-based professional development groups is considered part of the teacher’s job in Japan. These groups play a dual role: not only do they provide...
a context in which teachers are mentored and trained, they also provide a laboratory for the development and testing of new teaching techniques... Teachers spend a considerable amount of time each month on Kounaikeenshuu. One of the most common components of Kounaikeenshuu is lesson study (jugyou kenkyuu). In lesson study, groups of teachers meet regularly over long periods of time (ranging from several months to a year) to work on the design, implementation, testing, and improvement of one or several “research lessons” (kenkyuu jugyou)... The premise behind lesson study is simple. If you want to improve teaching, the most effective place to do so is in the context of a classroom lesson. If you start with lessons, the problem of how to apply research findings in the classroom disappears (pp. 109-111).\textsuperscript{38}

In other words, lesson study is a strategy for improving teaching in context. It has the following features:

- It is based on a long-term continuous improvement model.
- It maintains a constant focus on student learning.
- It focuses on the direct improvement of teaching.
- It is collaborative.
- Participating teachers see themselves as contributing to the development of knowledge about teaching as well as to their own professional development.

Just as Feiman-Nemser’s framework of central tasks of learning to teach and essential elements of well-designed teacher development programs, one might think that how Japanese teachers work together to improve their practice and contribute to knowledge about teaching is beyond the reach of their sub-Saharan African colleagues. This too is not necessarily the case, despite obvious differences in resource availability and primary school teachers’ educational attainment in the two contexts. In fact, although in their infancy, several teacher development programs in sub-Saharan Africa have features that are close to those listed above. Guinea’s small grants program for teacher-led professional development and school improvement projects in an example (see Schwille et al., 2002). The LCE Forum (Box 7.3.) in Namibia is yet another one.

\textsuperscript{38} The following Web sites provide ample information on Lesson Study: www.rbs.org/lesson_study; www.tc.columbia.edu/lessonstudy; www.lessonresearch.net; www.lessonlab.com; www.globaledresources.com.
Box 7.3. Using video technology to facilitate reflective practice and empower teachers in Northern Namibia

Namibia has experimented with a school Self Assessment System (SAS) since 2002, as part of a School Improvement Program (SIP) targeting grades 1-4. SAS is designed to bring teachers, parents, and principals directly into the process of asking the “why? how? what can be changed?” questions that emerge from critical inquiry. It is seen as a mechanism, a framework, for guiding locally initiated and implemented school improvement activities. As a complement to the SAS instruments, the SIP teacher support providers have been using video technology as part of the process of helping teachers become reflective practitioners. Starting in February 2003, a group of four female lower primary teachers have met on an average of every two weeks with several support providers. The original purpose of the meetings was to collaboratively develop one or more videotapes in the teachers’ classrooms to be used as models of good practice in the use of Learner-Centered Education (LCE) and Continuous Assessment (CA). During the first session, the teachers decided they wanted to focus on specific aspects of LCE, practice those strategies, and then develop a training tape once they were comfortable with their level of skills.

One early strategy was to estimate the amount of teacher talk compared to the amount of learner talk in the lesson. It quickly became clear to the teachers that the more they heard their own voices in the lesson, the less time was available to learners for questioning and discovering. Since that first meeting, the teachers themselves as well as the support providers have been truly amazed at the degree of improvement in their instructional practices. One teacher confidently and eloquently discussed how she and a colleague planned and presented a particular lesson; she pointed out the key LCE strategies she used and why she chose the particular CA technique for the basic competency related to categorizing and identifying the names of domestic animals and wild animals.

During the most recent meeting of the LCE Forum one member of the group proudly reported that she and her colleague were now being asked by other lower primary teachers in their school to help them plan more learner-centered lessons. On their own initiative, they have made arrangements with the principal and the resource teacher to assist them with scheduling so that they can team-teach in both their classrooms. Their accomplishments are beginning to be recognized by the principals and their peers. With the impetus of systematic reflection via the SAS and video taping as a tool that allows review of actual classroom situations and the opportunity for collaborative problem solving, the experience of these four teachers is a model of what reflective practice can accomplish toward improving the quality of education. The teachers are no longer waiting to be told how to improve their use of LCE and CA but are directly informing and choosing the kinds of professional development support they require. Furthermore, on their own they are developing and researching a variety of teaching materials and strategies that they have discovered they need.

Source: van Graan et al., 2004 (adapted).

Using alternative delivery modes to achieve results

The issues of institutional in-take capacity and cost and financial sustain-
ability have been tackled by several countries via alternative delivery modes, including primarily distance education and Teacher Resource Centers. Regarding distance education, ADEA (2004) provides an overview and argues “it is fully acknowledged that distance education is particularly appropriate to reach dispersed teacher populations without disrupting their personal, professional and social lives. It suits best countries where face-to-face institutions cannot respond urgently and adequately to increasing demands for teacher education due to lack of space and facilities following the introduction of Free Primary Education” (p. 3). Print remains the predominant medium, but increasingly other technologies are being used, including interactive radio or video, computer-based instruction, and Internet-based learning. These media are used both independently and in combination (see Box 7.4. for an example of combined application from Mauritius).

**Box 7.4. Upgrading primary school teachers through distance education in Mauritius**

Upon reaching the objective of UPE in the late 1980s, the government of Mauritius committed itself to quality improvement of teaching and learning in primary schools. One of the decisions made to this end was to upgrade practicing teachers through a part-time Advanced Certificate in Education (ACE) course at the Mauritius Institute of Education (MIE). The ACE is an 18-month program comprising five courses on the subject areas of primary school curriculum and one Educational Core component on Education and Curriculum Studies. The first cohort enrolled in February 1991 and graduated in December 1992.

The originally planned ACE, required teachers to attend lectures on the MIE campus on two full days a week and Saturday mornings. However, it was soon realized that this was impracticable because of the large number of classes that were left unattended in primary schools during school hours. The contact time was therefore reduced to one full day a week during term time and some days during the holiday period for intensive training. Nevertheless, it became clear that at the rate at which the training was proceeding (i.e., 700 every 2 years) it would take more than 10 years to offer the program to all the 4000 primary school teachers. Furthermore, the acute shortage of teachers prevailing during that period prompted the Ministry of Education and Science to review its decision to release teachers on a one full day per week basis as this meant that a large number of classes would be left unattended. Distance Education was proposed as the best alternative.

Following visits to Distance Education Centers in India, Kenya and Australia and a 4-week training of trainers session conducted at the MIE by a team from the Indira Gandhi National Open University, 90 DE Units of about 20 pages each were written and produced in the core subjects and in Education Studies. A mixed mode approach was adopted which required trainees to undertake self study of course materials and to attend face-to-face sessions on the MIE campus for 12 full days every year. An agreement was reached between the Ministry of Education and Science and the Teachers’ Union for the release of teachers on six full days during term time and teachers would come voluntarily for six days during their holiday time.
to attend the face-to-face sessions. This formula proved to be quite practicable and has been maintained to date.

The distance based ACE began in 1993 and it has, to date, upgraded 2769, not including the current cohort of 440 teachers. More than half of the graduates view that their own learning experience through the ACE program has contributed in developing and applying new teaching and learning approaches in their classes. After having gone through the distance delivered ACE, some teachers realized that they “also can promote new learning in their classrooms if they can adopt clear objectives and appropriate teaching strategies as they benefited from the ACE” (Teacher’s comment). Most of them, however, found the Educational Core more useful than the subject matters courses.

The direct relation between upgrading teacher qualification and pupils’ achievement is difficult to establish. However, the enhanced performance of teachers may have contributed to sustain that of pupils who took the primary school leaving certificate examinations (CPE) from 1994/95 onwards. From 1994 to 2001, the pass percentage has increased sensibly, except in 1999, from below 60% to almost 65% in 1998, 2000 and 2001. 

Source: ADEA, forthcoming (slightly adapted).

There are several important lessons to be drawn from this case:

- **One size does not fit all.** Teachers have different entry profiles and thus different learning needs. For a teacher development program to be useful, be it residential or by distance, it needs to focus on classroom practice and be linked to real classroom situations.

- **The developmental path from subject matter knowledge to pedagogical knowledge to pedagogical competence is far from automatic and needs to be explicitly addressed.** Making a shift from professional knowledge (including subject matter knowledge and pedagogical knowledge) to pedagogical competence may depend to a great extent on teachers’ commitment to career-long improvement.

- **There are limits to what can be achieved by distance education mode of delivery.** Follow-up by inspectors, head teachers, and pedagogical advisers is important; so is teacher collaboration in context.

**Concluding thoughts**

In the first part of this chapter instructional practices that are reported to be effective in African classrooms as well as in other parts of the world have been explored. Instead of taking sides for one or the other of the main competing visions of effective teaching (open-ended instruction and structured instruction), the main message from this part is to resist dichotomous considerations and embrace learning-centeredness as a framework for thinking and acting...
in the best interest of children. Having established that teaching as delivery of information is not effective in helping children make connections between what they bring to school and what is proposed at school on the one hand and between ideas embedded in a given lesson and across lessons, the question to be posed is how best to help children learn more than unconnected facts.

The question that has animated the second part of the chapter is how best to prepare teachers for teaching and provide for their further development in service, in a financially sustainable way. Some tentative answers have been provided, drawing on research and experience in both sub-Saharan Africa and other parts of the world. The following set of key messages can be drawn from this research and experience base: (i) The curriculum and pedagogy of teacher education need to be informed by, as well as (ideally) inform, curriculum and pedagogy in schools; (ii) focusing pre-service teacher education exclusively on academic content is misguided; it is more productive to recruit prospective teachers with strong content knowledge and focus their preparation on the central tasks of teaching; (iii) guided practice in the field is critical at the pre-service phase of the learning-to-teach continuum; (iv) the classroom and the school are the best place for acting toward improving teaching practice; and (v) practicing teachers learn more effectively in context from each other, in the framework of learning communities, but this does not rule out support from outside the school.

Some, if not all, of these messages are already reflected in teacher education policy and practice in several sub-Saharan African countries. What stands out from the glimpses of the changes that have been provided in this chapter is that there are efforts to reform pre-service teacher education and to systematize continuous professional development for practicing teachers in many countries. With respect to pre-service teacher education, the general tendency is toward shortening the length of training and making more space for the practical aspects through field experiences. As regards continuous professional development, there is a clear tendency, at least based on the programs reviewed, to bring training closer to teachers’ workplaces and to involve them in decisions regarding the content and organization of such training. However, there remain, unsurprisingly, formidable challenges and weaknesses of various kinds. These include, among others:

- Limited attention to multi-grade teaching and teaching large classes: As argued in Chapter 6, multi-grading is a promising strategy that needs more attention if quality UPE is to be achieved by 2015. It is a practice that can
serve both large and “normal” classes. Paying more attention to it should begin at the pre-service level.

- The absence of incentives for teachers in remote rural or difficult areas: Given that attaining UPE will depend in large part on boosting enrollment in hard to reach areas, special attention needs to be accorded to teachers who are appointed to serve in those areas. This raises issues of both incentives and personnel management.

- Career planning for contract teachers: Having a career plan stands as a critical, motivational factor for contract teachers; as a matter of fact, in a context of relatively low salaries, it can be an effective strategy for making teaching an attractive career, sustaining the enthusiasm of prospective teachers, and retaining them in teaching upon graduating from their pre-service program.
Chapter 8. Improving the effectiveness of schools: The African experience

By Martial Dembéle

Chapter 2 provides an integrated perspective on the evidence from the school-effectiveness and school-improvement research as the first step towards a framework for quality improvement. This chapter examines the practice of quality improvement in sub-Saharan Africa. It reviews efforts to ensure and improve the effectiveness of schools and how these have been and are being informed by international research and experience. The issue is of critical importance: “Educational reforms live or die by the success of their implementation at the school level” (Verspoor, 1992, p. 23).

This chapter develops the framework proposed in Chapter 1 (Figure 1.1), using the following input and process factors as analytical framework (inspired by Heneveld and Craig, 1996) to review a set of school improvement programs or projects underway or completed in 12 sub-Saharan African countries:

- The material conditions of teaching and learning;
- Teachers’ professional development;
- The curriculum and instructional practices;
- Classroom and school level assessment;
- School leadership;
- Supervision and support mechanisms; and
- Parental and community involvement in and support to school.

This framework is expanded to include two school improvement design principles that were highlighted in Chapter 2: focusing on student learning and viewing school as the unit of change. The programs, some of which are described in the country cases commissioned for this study, include (Table 8.1)

- Improving Educational Quality (IEQ) in Malawi and Uganda (IEQ, 2002);
- School Improvement Projects (SIP) in Kenya, Tanzania, Uganda, and Zanzibar (Anderson, 2002);
- Teacher Development and Management System (TDMS) and Instructional Materials Supply (IMS) in Uganda (Eilor et al., 2004);
- Small Grants Program for Teacher-led Collaborative Professional Develo-
pment and School Improvement Projects (known by its French acronym PPSE) in Guinea (Diallo et al., 2001; Schwille et al., 2001, 2002);

- *Cahier des charges* (CdC) and *Projet d’école (PE)/Fonds de développement scolaire* (FDS) in Senegal (Gueye et al., 2004)
- *Contrats programmes* (CP) in Madagascar (Ratrema et al., 2004)
- Head Teacher Support Groups (HTSG) in Kenya (Weva, 2004)
- *École de Qualité Fondamentale* (EQF) in Benin (Dewanou et al., 2004);
- School-Self Evaluation (SSE) in Swaziland (Quist, 2004);
- School-Self Assessment (SSA) in Namibia (van Graan et al., 2004); and
- Results-Based School Management (GAR) in Burkina Faso (Samoff et al., 2001).

**Table 8.1  Quantitative overview of the programs/projects**

<table>
<thead>
<tr>
<th>Initiative</th>
<th>Country</th>
<th>Explicit focus on student learning</th>
<th>Material conditions</th>
<th>Teacher development</th>
<th>Curriculum and instructional practices</th>
<th>Assessment of student learning</th>
<th>School leadership</th>
<th>Supervision and support</th>
<th>Parental &amp; community involvement</th>
<th>Whole school as unit of change</th>
<th>Total # of factors taken into account</th>
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Focusing on student learning

There is a convergence of professional opinion (see Chapter 2) that focusing on student learning must be the linchpin of any school improvement effort. In a way, this is not new, as student learning is the *raison d’être* of any educational enterprise. Most, if not all, education projects or programs aimed at quality improvement claim that ultimately they want to have a positive impact on student learning. What is new is a call for (i) investment choices to be informed by explicit student learning objectives (Heneveld and Craig, 1996); (ii) embracing a vision of teaching and learning that will help attain these objectives; and (iii) carefully monitoring student learning and using it as a key input in formative evaluations.

As it appears in the table above, student learning constitutes an explicit focus in only six out of 17 programs. These include the IEQ initiative in Malawi, a School Improvement Project in Zanzibar, Guinea’s Small Grants Program for Teacher-led Collaborative Professional Development and School Improvement Projects, Senegal’s experience with *job descriptions* for teachers, school heads and inspectors, and with School Development Projects, and finally Burkina Faso’s Results-based Management System (Box 8.1.).

### Box 8.1. Improving student learning in Burkina Faso

Burkina Faso’s introduction in the late 1990s of results-based management in schools on a national scale is perhaps an example of Myers’ (1984, 2000) notion of expansion by explosion. Instead of continuing to rely on the existing inspection system, this new approach called for using data on school achievement to improve quality and for providing teachers with more appropriate support in ways that recognize their importance and motivates them to pursue efforts to improve quality. To this end, two instruments were developed, one for *chefs de circonscription* (district officers) for supervising and supporting whole schools, and the other for pedagogical advisors for supporting individual teachers in their classrooms. School heads and teachers were seen as key actors in this approach and expected to lead the design and implementation of school and classroom improvement action plans. But the approach to implementing education change was rather administrative and bureaucratic to the extent that making the instruments available to schools and teachers eclipsed attention to soliciting the input of those involved and providing them adequate training. Despite some encouraging outcomes, after three years of implementation, results-based school management seems not yet to have taken strong root.

The epilogue to this assessment by Samoff *et al.* (2001, p. 19) is that this new school management and support system continues and seems to be impacting quality positively in Burkina Faso. In 2003 the success rate at the end-of-primary school national examination
reached 70% for the first time (from an average of 50-60% before). In addition, gross enrollment reached 47.7% in 2002–03, against 38.6% two years before. The Ministry of Basic Education and Literacy has attributed these indicators to a set of factors, including implementation of the results-based school and teacher management and support system. Notwithstanding the fact that association does not prove causality and the fact that there are other quality improvement interventions, it is plausible that the school and classroom improvement plans that school teams and individual teachers designed and implemented has contributed to these results.

Source: Samoff et al. 2001 (adapted)

Another example is Zanzibar’s SIP (Box 8.2.) where a program was designed to develop and implement school level actions that would support the English language development of students in Form 1 (the first year of secondary school). Notwithstanding the concerns raised by the evaluators and their questioning the quality of “active learning” embodied in some of the pupil activities, this project can be regarded as promising. Its design and investment choices were informed by student learning objectives, in response to a practical problem facing students as well as teachers: an abrupt and challenging shift from instruction and learning in Kiswahili to English. The problem arose out of practice and practitioners were involved in the process of attempting to solve it.

The same can be said about Guinea’s Small Grants Program for Teacher-led Collaborative Professional Development and School Improvement Projects (Box 8.3.). In this program, teachers were organized in teams within the same school or across schools to (i) reflect on student performance, (ii) take a serious look at their own practice as a possible source of unsatisfactory student performance, (iii) draw a pedagogical renewal project aimed at improving that performance, including a plan for evaluating such performance, (iv) program the activities to be undertaken, (v) identify the material resources needed to carry out their action plan, (vi) budget these resources, (vii) implement the plan while documenting it, and (viii) report back on how the grant they were awarded was used. To this end, all teacher projects have explicit objectives for student learning of a specific subject matter or aspect of the subject on the one hand and for teacher learning (linked with student learning) on the other hand.
Box 8.2. Improving student learning through English language in Zanzibar

In Tanzania the official language of instruction shifts from Kiswahili to English when students enter secondary school. English is only taught as a subject in primary schools. The change to English across the curriculum presents an extremely challenging teaching and learning situation which adversely affects student learning. The Secondary English Language Orientation Project (SELOP) in Zanzibar was established to provide a practical response to this problem. The project embodied a “packaged teaching and learning” approach to pedagogical change and had two major components. The first consisted of the production of English language curriculum-based materials designed to promote a process-based, interactive style of learning. Using these materials, teachers in all core subject areas (English, social science, mathematics, general science) act as teachers of English through the medium of their subject specialties. The second major component was the establishment of an in-service training strategy to support implementation of the program by all teachers. The in-service training, included four half-day workshops per year for all teachers, delivered through a decentralized network of existing teacher centers and individual classroom visits by a specialized team of part-time district program consultants, head teachers, and other users of the project within and between schools (i.e., peer coaching). An evaluation of the project was conducted near the end of the initial phase (1994-1997). By that time, the program materials had gone through several cycles of locally managed development, field testing, and revision, and had reached all 95 secondary schools and 11,000 Form I students. Overall, the evaluators were positive in their judgment of the program materials (clarity, simplicity, curriculum fit), though they questioned the quality of ‘active learning’ embodied in some of the pupil activities built into the lessons. The in-service training strategy resulted in a common facilitative teaching style of the teachers involved in program implementation. Teachers’ lack of confidence in their own English-language proficiency was identified as a major constraint on the effectiveness of implementation. There was little evidence that the SELOP teachers transferred teaching methods embedded in the program to other classes or that non-program teachers visiting SELOP classes adopted those methods without any supporting curriculum materials. As in several other school improvement programs, there was no valid longitudinal measurement of student learning since materials were constantly evolving until the final year in response to feedback from the field and new tests developed accordingly. However, end-of-year skill-based tests (adapted from a series of tests approved as reliable and valid) were administered. The overall scores were extremely low (from 28.8% down to 3.8%), suggesting that the tests were too difficult and students were not performing at the level specified in the curriculum. A supplementary analysis of the national Form II examination results showed significantly higher scores. In addition to these learning outcomes, impressionistic and anecdotal data suggest that the lessons taught following the SELOP approach were generally found by students to be enjoyable and motivating. Both teachers’ and students’ comments can be summarized as follows: “All the time we speak English... You can see the difference... The program feels positive... Teachers can speak now in English... Students can talk to each other... though their language is broken, something is better than nothing.”

The small grants program consists of a set of planned activities, initiated, developed and implemented by teams of four to ten teachers organized into units for education renewal (CRE). The first year is taken up by designing and selecting the projects, followed by implementation during the second year, with the possibility of extension for two additional years. The teams whose projects have been selected by a regional jury receive the funding they ask for and also benefit throughout the project’s duration from special support in the form of participation in a workshop on project management and evaluation at the beginning of the school year, followed by extra support from a facilitator or other resource persons, as required, and by three visits a year from an evaluator. Project results are presented at the end of the school year by members of the educational renewal teams during regional dissemination seminars.

Six years of implementation have allowed PPSE to develop the capabilities of 300 pedagogical support personnel who are able to lead the quality improvement activities at the school level and support teachers in their efforts to change. Thanks to PPSE, nearly all primary school teachers (more than 15,000) have been sensitized to educational renewal and introduced to project design. More than half of these teachers have taken part in writing final project proposals and more than 6,000, distributed among 1,200 teams, had a chance to implement a project between 1996-1997 and 2000-2001. The reasons for the broad participation are varied but include the following:

- An organization that promotes accountability from school level to the central administration;
- The rigor inherent in action research and experimentation, accompanied by incremental expansion;
- Responding to teachers’ felt needs by providing them with modest material and financial assistance;
- An integrated training system for all program participants resulting in the strengthening of the capacity of support personnel to provide non-directive assistance to teachers;
- An impartial means of assessing and selecting projects and involving the many educational leaders;
- The importance given to making evaluation an integral part of the program;
- The building of partnerships among participants at various levels based on mutual respect;
- Regular schedule of regional dissemination seminars, capped by an additional national seminar; and
- A long-term continuous improvement perspective, with an eye on short-term goals.

Source: Diallo et al., 2001, pp. 3-5.

The three programs thus reviewed briefly have in common what Hopkins (2001) describes as a new wave of collaborative school development planning. It “begins with learning goals for students. A teaching strategy for achieving...
them is then produced. This strategy is supported by any necessary adjustments to the school’s management arrangements: for example, modifications to curriculum policies and schemes of work, changes to the staff development program and the timetable and any re-allocation of budgets, roles and responsibilities needed to achieve the goals set... It is as if they [schools] asked ‘What changes in student performance do we wish to see this year?’ Having decided on these changes, they then devise a strategy for bringing them about” (pp. 103 and 112). In this process, collaboration and teams, not individualism and hierarchies, are the keys to success! In this respect, these three programs exemplify effective process. Their next challenge is to ensure that the impact of the programs on student learning is carefully monitored and used as a key input in the formative evaluations.

**Improving the material environment of teaching and learning**

As argued in *Chapters 2 and 5*, an adequate supply of material inputs is essential to creating an environment in which effective teaching and learning can occur. “If basic resources and facilities are not present this will obviously be detrimental to the educational endeavor as a whole” (Scheerens, 2000, p. 60). Essential resources include textbooks, supplementary reading materials, teacher guides, classroom equipment and furniture, and a secure and comfortable school and classroom physical environment. About half of the programs include this factor. Among these programs, Zanzibar’s SELOP (*Box 8.2.*), Guinea’s PPSE (*Box 8.3.*) have already been discussed; in addition Benin’s *Fundamental Quality Improvement Program* (*Box 8.4.*) and Uganda’s IMS are worth highlighting.

Benin’s *École de qualité fondamentale* (EQF) is a good example of a ministry’s effort to improve the quality of education through provision of textbooks and other material resources to schools and classrooms (see Dewanou *et al.*, 2004);39 so is Senegal’s smaller scale *Fonds de développement scolaire* (FDS) (see Guèye *et al.*, 2004).

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39. Guinea has been implementing a somewhat similar USAID-funded project (*Niveaux fondamentaux de qualité et d’équité* (NFQE)) since 1997.
Box 8.4. Improving input provision in Benin

In the mid-1980s and as part of a broad sector reform program, the Ministry of National Education (MONE) of Benin initiated a participatory process that led to the definition and adoption of a set of 50 quality norms. A nationwide assessment of the conditions of teaching and learning using these norms as indicators revealed that on average schools were below one-third of the desired minimal level. As a result of regional workshops held to share the findings of this assessment, ten priority norms were identified and used as a tool for designing three-year intervention and investment plans in priority zones to increase or maintain school characteristics at minimal level. This included printing and provision of one French and one math textbook for two pupils, one workbook per pupil, and 10,000 teachers’ guides per subject for all subjects. The implementation of these plans is reported to have improved indicators such as GER (68.84% to 88.49%), gender parity (0.61 to 0.69), grade repetition (25.11% to 19.84%), retention (41.8% to 49.2%), and completion (34.3% to 36.1%) between 1996 and 2001. However, these results are considered below norms. Explanatory factors include a 35.7% increase in the number of schools during the period, teacher shortage, a dysfunctional teacher development network, the presence of 40% unqualified teachers in the teaching force, and lack of textbooks and limited use of those made available.

Source: Dewanou et al., 2004

Uganda’s IMS program (Box 8.5.) is another example of an attempt to ensure an adequate supply of teaching/learning materials. Changes in national policy and increased school-level autonomy combined to improve the availability of key inputs.

The process of consolidation, central bulk purchasing and distribution, coupled with grants to schools, was also a feature of Guinea’s PPSE. While the objectives of FDS are different in kind, as compared with those of EQF, both had provision of teaching and learning materials as a key feature during implementation. In both cases, the narrow focus on input factors was put forward as a weakness (Dewanou et al., 2004; Guèye et al., 2004). In the case of FDS, school libraries eclipsed other objectives and expected outcomes. Notwithstanding this critique, these two programs are reported to have had a positive effect on the quality of primary education in both countries through an improvement of the material conditions of teaching and learning (Guèye et al., p. 18; Dewanou et al., pp. 23-34). As Carron and Châu (1996) argue, schools cannot function effortlessly without the bare necessities. Ensuring that these are present has guided much of donor support to education in sub-Saharan Africa until the 1990s; and the World Bank has been a major player in this respect (see Moulton, 2004 a, for a review of the Bank’s experience).
Box 8.5. Improving input provision in Uganda

A reform of Instructional Materials Supply was undertaken in the framework of Uganda’s Primary Education Reform Project (PERP). The overall objective of this reform was to enhance quality of instruction and learning in primary schools through (i) timely procurement and supply of the recommended learning materials, including four approved textbooks (one per subject) in a ratio of 1:3 students, teacher guides for primary schools and teacher colleges; and (ii) prolonging the useful life of textbooks through a book management course in the pre-service and in-service teacher training curricula.

Head teachers, in collaboration with the subject heads and class teachers, are in charge of identifying the lists of textbook requirements at the school level. At the district level, DEOs are responsible for consolidating individual book orders for schools, submitting the consolidated book orders to IMU and monitoring textbook utilization at the school level. The independent Instructional Materials Unit (IMU) consolidates textbook orders, undertakes central bulk purchasing, distributes the textbooks to the districts, trains the district education staff on utilization and conservation of instructional materials, and monitors their utilization, conservation and stock management. Finally, capitation grants were awarded to schools for purchasing supplementary materials. For the first time in Uganda, a recurrent budget for supply of instructional materials was created in the 1998–99 fiscal year. As a result of this reform, the problem of shortages in supply of material resources (e.g., textbooks and teacher guides) has been reduced. This and other improvements in material conditions of teaching and learning, including equipment, school buildings, construction of teachers’ houses within the vicinity of schools, have positively impacted on the teaching-learning environment and on teachers’ motivation and commitment to the profession. The impact of PERP on learning materials provision is multifaceted:

• Establishment of an open competitive bidding process for all learning materials. This has resulted into over 50% reduction in the price of textbooks.
• Teachers participate in the selection of learning materials.
• Monopolies in textbook development, publishing and distribution have been broken.
• Local authorship and publishing has been revived. Before the reform, there were only two local publishers, but today there are over 20.
• Stimulation of retail outlets for learning materials throughout the country: Before the reform, all retail outlets were based in Kampala; today there is at least one in each district.
• The quality of learning materials has been enhanced, aligned with the curriculum, based on local experiences and is gender sensitive.
• The procurement cycle for books has been reduced by more than three months.
• The establishment of the line item in the education sector recurrent budget and the reforms undertaken have created a base for sustainable provision of learning resources.

Source: Eilor et al., 2004, pp. 20, 27 and 29 (slightly adapted).
Making sure that the bare necessities are available is obviously a positive step towards quality improvement; however, “to believe that the mere provision of those necessities, without attention to how they will be used in school and in the classroom, will guarantee a high-quality teaching process, is unrealistic” (Carron and Châu, 1996, p. 203).

Building teacher and school capacity for improvement

As argued in Chapter 7, knowledge of demonstrably effective instructional practices is a necessary but not sufficient condition for improving instructional practice. Without teachers who are able and ready to adopt and adapt such practices, successful quality improvement in education will remain an impossible dream. Hopkins (2001, p. 96) argues that “a systematic and integrated approach to staff development, that focuses on the professional learning of teachers and establishes the classroom as an important center for teacher development is central to authentic school improvement.” Teacher education, both pre-service and in-service, is thus central to quality improvement in education. As this topic is amply developed in Chapter 7, it will not be dwelt upon here. What needs highlighting is that 13 of the 17 programs reviewed involve teacher development as a cornerstone of school improvement. Uganda’s TDMS, Guinea’s PPSE and the improvement programs supported by the Aga Khan Foundation (AKF) in East Africa are illustrative in this respect. All three focus explicitly on teacher learning and professional development (and management, in the case of TDMS), without neglecting other input or process factors.

Two of these programs, namely PPSE and AKF-supported school improvement programs have the distinctive feature of being whole school-oriented. In other words, improvement efforts in both cases target all the teaching and management staff in each participating school. This is important to the extent that there is a dialectical relation between classroom change and school change. Put differently, individual teacher change efforts may be inhibited, abandoned or neutralized if they are not nurtured by a community of learning practitioners. As argued by Hopkins and West, “schools will not improve unless teachers, individually and collectively, develop. While teachers can often develop their practice on an individual basis, if the whole school is to develop then there need to be many staff development opportunities for teachers to learn together” (Hopkins and West, 1994, cited in Hopkins, 2001, p. 104). Elsewhere, Hopkins (2002) argued that “conditions need to be created within the school that ensure...
that individuals are supported through the inevitably difficult and challenging process of altering their ways of thinking and doing” (p. 276).

Altering ways of thinking and doing has indeed been a difficult and challenging process in many of the programs where such changes were targeted. School improvement projects supported by the Aga Khan Foundation in East Africa, which reported highly variable and novice understanding of child-centered, activity-oriented teaching methods, are cases in point in this respect. In one of the projects, this was due in part to the bias of the in-service component toward supporting individual teachers, contrary to initial plans (see Anderson, 2002).

The cases of Namibia’s Basic Education Teacher Diploma reported by van Graan et al. (2004) are also illustrative of the inevitably difficult and challenging process of pedagogical renewal (see Chapter 7). Tabulawa (1998, 1997) provided a compelling explanation of why it is proving so difficult to implement child-centered pedagogy in Botswana. In his view, the inconclusive results have often been rationalized in simplistic, technical terms such as lack of resources and/or poorly-trained teachers, whereas the real explanatory factors have to do with teachers’ assumptions about the nature of knowledge and how it ought to be transmitted, their perceptions of students, and what they consider to be the goal of schooling. Social factors such as authoritarianism inherent in Tswana society must also be factored in. Teachers’ assumptions, Tabulawa argued, are incongruent with the basic tenets of child-centered pedagogy; taking them for granted when affecting change in classroom practices can lead to disappointing results. Challenging and altering these assumptions is a formidable task that may be beyond the current capacity of most schools in sub-Saharan Africa.

In his review of the appropriateness of the design principles of AKF’s school improvement program in East Africa, Hopkins (2002) referred to “capacity building” as a necessary companion of the principle of “the whole school as the unit of change.” “Without an emphasis on capacity,” he argued, “a school will be unable to ‘transform’ itself and sustain continuous improvement efforts that result in student attainment” (p. 287). School capacity is defined by Newman, King and Young (2000, cited by Hopkins, p. 287) as “the collective competency of the school as entity to bring about effective change.” Capacity, in their view, has the following core components:

• Knowledge, skills and dispositions of individual staff members;
• A professional learning community in which staff work collaboratively to set clear goals for student learning, assess how well students are doing,
develop action plans to increase student achievement, while engaging in inquiry and problem-solving;

- Program coherence – the extent to which the school’s program for student and staff learning is coordinated, focused on clear learning goals and sustained over a period of time; and

- Technical resources – high quality curriculum, instructional materials, assessment instruments, technology, workspaces, and so on.

To these, Hopkins added “transformational leadership approaches” and “effective co-ordination strategies.” Taken together, these components of capacity constitute the internal enabling conditions or management arrangements that must be in place for the school to get work done and to develop. They must be balanced with teaching and learning, if changes in classroom practice are to become school-wide and sustained into the medium term. However, it would be unrealistic to expect that this balancing of capacity building and teaching and learning can be achieved in a uniform manner in all schools. Hopkins (2001) identifies three types of schools, with type 1 at the lower end and type 3 at the upper end of the capacity continuum. Obviously, if a school is under-resourced and has little experience of school improvement efforts, focusing solely on classroom practice and student learning would be misguided. “In such circumstances [...] it is also important to build the ‘capacity for sustained improvement’” (Hopkins, 2001, p. 151). Conversely, in “schools where the internal conditions are sufficiently robust and established,” classroom change can be the focus of school improvement efforts while nurturing the enabling conditions. Schools in between will need to pay equal attention to both. In other words, school improvement is a process, not an event. It can be visualized as a continuum, with schools placed at different spots reflecting their “growth state” and readiness to move up to higher grounds.

The idea of a continuum may help explain some of the shortcomings of the AKF-supported and other school improvement programs in sub-Saharan Africa. Could it be that these programs have attempted to apply strategies appropriate for type 3 schools in an environment that in fact would allow at best strategies for type 2 schools? This is not a rhetorical question. It calls for school improvement program designers to have a good understanding of types of schools and corresponding strategies. Hopkins’ discussion of “differential school improvement” is helpful in this respect (see Hopkins, 2001, pp. 159-178).

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40. Research capacity building at both central and school level has been the strategic drive of USAID-funded Improving Educational Quality (IEQ) project. For details, see Pathways to Quality (IEQ, 2002). Capacity building is also dealt with in the final chapter of this discussion paper.
Strengthening school leadership and school autonomy

“One of the major growth areas in education in recent years has been in the field of leadership training. While most of this could be criticized as being too narrowly focused, competency-driven and de-contextualized, it has reinforced the centrality of the head teacher’s role in leading school development and improvement” (Hopkins, 2001, p.115). As it appears in Table 8.1, twelve out of the 17 improvement programs selected for review have school leadership as a component. One even has it as exclusive focus: Kenya’s Head Teacher Support Groups (HTSG) (Box 8.6.). This is consistent with the findings from school-effectiveness and school-improvement research conducted in both developed and developing countries (Republic of The Gambia, 2004; Gauthier et al., 2004; Weva, 2004; Hopkins, 2001; Scheerens, 2000). Like in any social organization, goal achievement by and change capacity of a school depend to a great extent on the leadership provided by the school head.

Located between the hierarchical administrative structure and the school, school heads are in a way bi-directional change agents. They are oriented both toward the bottom and the top of the educational pyramidal structure. They are polarized, on the one hand, by the multidimensional aspect of their school’s pedagogical activities, which require high quality instructional leadership, and, on the other hand, by the increasingly numerous and ambitious administrative mandates of their superior, which require more advanced management skills (Weva, 2004).

School heads set the tone by setting a clear vision or a set of purposes for their school, involving all stakeholders, including pupils, teachers, parents and members of the local community, in vision formulation and other aspects of school life, managing the curriculum, ensuring a climate conducive to learning, setting and having high expectations for all students, paying attention to both student learning and teacher professional learning and development, etc. According to Hopkins (2001), this requires a combination of transformational (as opposed to transactional) and instructional leadership. Transformational leadership “focuses on the people involved, their relationships, and requires an approach that seeks to transform feelings, attitudes and beliefs. Transformational leaders not only manage structure, they also purposefully seek to impact upon the culture of the school in order to change it” (Hopkins, 2001, p. 41. Transactional leaders promote the interest of the system, i.e., central level, and are concerned with managing structures and systems in order to ensure conformity rather than encourage creativity.
116). Instructional leadership “emphasizes ‘the behaviors of teachers as they engage in activities directly affecting the growth of students’” (Leithwood et al., 1999, cited by Hopkins, 2001, p. 119).

What emerges from these definitions of leadership is a complex set of roles that a school head is to play. The kind of school leadership described may be thought to be beyond the reaches of sub-Saharan African education systems, where the majority of school heads are usually untrained for the job and the administrative mandates and extra-school responsibilities of school heads tend to eat up their time, making it almost impossible for them to pay attention to their essential roles of ensuring that their school achieve goals (that are typically set by the hierarchy) and promoting pedagogical renewal. But this need not be the case. Though not a panacea, school-based management (SBM), an approach that is consistent with moves towards greater decentralization and local autonomy in delivery of educational services (see Chapter 10), stands as an effective vehicle for transforming school leadership toward what is called for above. Examples that provide images of what could be already exist:

- Burkina Faso’s results-based school management system, whereby the school head is considered the first instructional supervisor and support provider at the school level (see Box 8.1.);
- Guinea’s PPSE, where school heads are members of and not necessarily heads of teacher teams – an example of dispersed leadership and of building teacher leadership (see Box 8.3.);
- Kenya’s HTSG, where head teachers meet as a group with other actors, including zonal inspectors and community members to discuss school management issues (see Box 8.6.);
- Senegal’s Projets d’école, whereby School Management Committees were set up, with membership including school personnel and community members, to (i) design, implement and evaluate school improvement projects; (ii) mobilize all stakeholders around the objectives of the projects; (iii) manage the resources necessary to attain project objectives; and (iv) support implementation of pedagogical innovations (see Guèye et al., 2004).
- Madagascar’s Contract Programs – inspired by Malagasy customary law, i.e., the Dina, and whereby SBM was used as a vehicle for better integrating the community in school planning and management in order to (i) improve access and subsequently quality; (ii) improve teacher quality and management of schools; (iii) strengthen supervision and support; and (iv) develop various replicable quality enhancing innovations. To this end, the missions, roles and responsibilities of various tiers of the education
system were redefined; school grants were provided to and managed by the community; and various local structures (e.g., parent associations, local management committees, school councils, local steering committees) were created or strengthened to take part in the implementation of contract programs, and training was provided to school heads and district officers and other educational leaders accordingly (see Ratrema et al., 2004).

These programs and others selected for review include some training for school heads as a measure for strengthening school leadership. Kenya’s HTSG is worth highlighting in this respect.42

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**Box 8.6. Head teacher support group in Kenya**

Following an analysis of the training needs of school heads, Kenya’s Ministry of Education concluded a bilateral agreement with the United Kingdom’s DfID for the training of school heads. The Primary School Management (PRISM) program was launched in 1996 with the goal of developing the competence of all 16,700 school heads in key areas of school management, including curriculum management, personnel management, and management of material, financial and physical resources. At the outset, the program was designed to rely entirely on local resources and on the community and school environment of each school head. This was considered a basic condition for success, sustainability and institutionalization of the development of school heads’ administrative potential. An organizational structure was created to this effect, namely the Head Teacher Support Group (HTSG), under the leadership of zonal inspectors. HTSGs are places where school heads meet on a regular basis with other educators, particularly inspectors and community members, to discuss various issues related to pedagogy and school administration.

Various studies conducted in Kenya have revealed that HTSGs have a positive impact on several indicators of improvement of basic education, including school governance, student participation and achievement, admission and retention rates, parent and community participation in school life and activities, gender equity in access, parental financial contribution, instructional leadership of school heads, implementation of effective strategies for decentralizing the training of school heads, and design and implementation of teacher development activities by school heads.


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The move to strengthen school leadership reflects a conscious recognition of a changing role, and has to do with the fact that, until recently, the vast majority of sub-Saharan African school heads were, and in fact are still, appointed,

42. Weva (2003) has identified three other encouraging initiatives. They include: Lesotho’s on-the-job training program for primary school heads; on-the-job training for school heads and inspectors offered by Nigeria’s National Institute of Educational Administration and Planning; and Swaziland’s national training program for school heads (a compulsory program for all newly appointed school heads).
based on teaching experience while receiving little or no training before taking office. Whatever on-the-job training opportunities they are offered tended to focus either on management issues at the expense of pedagogical ones, and vice versa, and rarely on both. There is little in the cases reviewed on school leadership in action, the Gambian case (Republic of the Gambia, 2004) and the AKF-supported project in Mzizima (Dar es-Salaam, Tanzania) (Andersen, 2002) being exceptions. This void should be filled so that we can have a better sense of the potential and challenges of school-based management in the region. Another reason for filling this void is that school leadership, like teaching, is very much influenced by the context in which it takes place. As Hopkins (2001) put it, “instead of models of leadership being cumulative, they tend to be relative and possess a distinctive historical flavor. All this is to say that leadership is a relative concept that is contextually bound” (p. 116).

We need to understand how African school heads act upon the autonomy that comes with SBM: whether it enhances student learning and to what extent, what difference it makes in parental/community involvement and participation in school affairs and in their support to school, what conditions must be in place for schools to reap all the benefits of SBM. The Gambia case study provides preliminary answers to these queries, notwithstanding its limitations.

This case study investigated the following question: Why did private schools outperform government and mission schools during the 2000 Monitoring of Learning Achievement (MLA) survey and similar national assessments? A re-analysis of the MLA data and of additional qualitative data gathered in two private schools as part of the case study highlights striking differences in school management style:

- Private school heads have greater autonomy than government school heads, and this enables them to take initiatives without fear of being reprimanded.
- Heads of private schools have high expectations for both students and teachers; they prioritize student learning and don’t make room for complacency.
- Heads of private schools “know what is happening in every class and can assess their teachers in terms of quality delivery. There is constant monitoring.” Teachers are aware of this and do not take any chances.
- The regularity of checking teachers’ work is greater in private schools
(66.7% daily and 33.3% weekly) than in government schools (21.43% daily, 42.9% weekly, 16.7% fortnightly, and 19.05% occasionally).

In all areas of school heads’ assistance to teachers (checking lesson notes, suggestions about teaching aids and school-based workshops), private school heads do better than their government school counterparts; in particular, lesson preparation and teaching aids are given prominent attention by private school heads, as it appears in the Table 8.2 below.

Table 8.2  School heads’ assistance to teachers in the Gambia

<table>
<thead>
<tr>
<th>School Type</th>
<th>Assistance in the form of checking lesson notes</th>
<th>Assistance in the form of suggestion about teaching aids</th>
<th>Assistance in the form of school-based workshops</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>No</td>
<td>Yes</td>
<td>No</td>
</tr>
<tr>
<td>Government</td>
<td>27.50</td>
<td>72.50</td>
<td>16.28</td>
</tr>
<tr>
<td>Mission</td>
<td>37.50</td>
<td>62.50</td>
<td>33.33</td>
</tr>
<tr>
<td>Private</td>
<td>11.11</td>
<td>88.89</td>
<td>100</td>
</tr>
<tr>
<td>Total</td>
<td>26.32</td>
<td>73.68</td>
<td>16.39</td>
</tr>
</tbody>
</table>

Source: Republic of the Gambia, Department of State for Education (2004, p. 32)

In addition, the Gambia study shows that:

- 71% of private school teachers report having a “very cordial” relationship with their school head, against 56% in government schools.
- There are shared responsibilities in private schools; roles are spelled out, and each teacher has a stake in the administration of the school.
- Leadership seems dispersed in private schools, whereby senior teaching staff (and two deputies, in addition, in one school) assist school heads to monitor, supervise and support other teachers.
- Education inspectors visit government schools more often than they do private schools.

This case can be regarded as an example of good management practices in an environment with considerable autonomy. How to strike a balance between school/local autonomy and central direction and regulation stands as one of the main challenges of the move toward more decentralization of the management of educational systems in sub-Saharan Africa. The challenge applies particularly to the public school system, given its historical highly centralized and bureaucratic nature.
Restructuring supervision and support mechanisms

Administrative and instructional supervision and support play an important role in improving what goes on in schools and in classrooms. There is also, paradoxically, evidence that the supervision and support that schools and teachers typically receive from inspectors and pedagogical advisors are insufficient and ineffective. Carron and De Grauwe (1997) found that “the impact of supervision and support on classroom teaching and on student achievement is far below expectation. […] That dissatisfaction is shared by many teachers in better off countries, with better organized resources” (p. 41), while Craig, et al. (1998) point out that “supervisors often ask how they can both help teachers grow as classroom instructors when they must also make a written evaluation of their effectiveness. This conflict is so great, that some countries have attempted to separate the roles, with some supervisors evaluating teachers in a traditional inspector role and others promoting teacher development” (p. 72). In most sub-Saharan African countries these issues remain to be resolved. From a quantitative viewpoint, the situation has deteriorated with the expansion of educational systems. There are simply not enough inspectors and pedagogical advisors to cater to all schools and teachers on a regular basis. Small, remote schools are especially ill-served (Carron and Châu, 1996). The situation will most likely get worse as countries make progress toward EFA; and for a few countries, this means doubling the current gross enrollment rate.

One of the vexing problems of inspectors’ and pedagogical advisors’ work is that they have to reconcile two tasks that are construed by school personnel as dichotomous: teacher support and teacher evaluation. Typically, the tendency has been to give priority to evaluation and administrative control, thus postponing pedagogical support (forever in some cases). Finally, inspectors and pedagogical advisors are caught between mandates they receive from the central administration and the expectations of schools and teachers. Since they perceive themselves as being in the service of the central administration, they often opt to attend first and primarily to the mandates of the latter. As a result, they are perceived by schools, including both school personnel and parents, as strangers at best and intruders or enemies at worst.

If one adds poor working conditions (in both schools and inspectorate offices) and work overload to the above problems, one can easily understand why “the impact of supervision and support on classroom teaching and on student
achievement is far below expectation” (Carron and De Grauwe, 1997, p. 41). But, as the same authors put it, notwithstanding limited resources, the main difficulty faced by school supervisors has to do with diversity of roles, tasks and expectations. As a matter of fact, they are torn between schools’ claim for actions tailored to their needs and central administration’s preoccupation with providing standardized services for all schools (p. 30).

In the foregoing, inspectors and pedagogical advisors are lumped together. This is not an oversight. It reflects the fact that, in reality, they play much the same roles in most sub-Saharan African countries. As Carron and De Grauwe (1997, p. 16) suggest, work division between these two categories of personnel is typically imprecise. Despite attempts to distinguish their roles – in particular by separating pedagogical support from evaluation leading to promotion (Brunet, et al., 2004) – personnel shortage leads to their sharing the task at hand, thus erasing the hoped for distinction of function in practice.

Carron and De Grauwe (1997, pp. 55-64) suggest five actions that can lead to improved supervision services:

- A more coherent description of the roles, tasks and functions, separating control from support activities, and administrative from pedagogical tasks;
- More openness and transparency, by making evaluation reports available to the school and the community and communicating information to relevant individuals;
- Strengthening follow-up, through action plans derived from school visits;
- Emphasis on school evaluation rather than teacher evaluation; and
- More involvement in system evaluation.

They argue that the main challenge in implementing these actions will undoubtedly have to do with changes in the mindset of inspectors and their adopting a genuine attitude of facilitation and support instead of control and sanction.

The attempt to bring middle managers, including inspectors, and staff developers (pedagogical advisors and normal school teachers) to adopt and develop such an attitude was a key feature of Guinea’s PPSE. The same attitude was encouraged in Burkina Faso’s results-based management and support system. In both countries, and arguably elsewhere in sub-Saharan Africa, progress on this front is a slow process as it calls for a paradigmatic change and therefore meets resistances of various kinds. The cultivation of this attitude may
be more successful during professional preparation. Unfortunately, in many countries—just like school heads—inspectors and pedagogical advisors are administratively appointed and often receive little or no training before taking office; and once they take office, the myriad of responsibilities makes it practically impossible for them to engage in meaningful professional development. “Arguably, what is most striking when considering the history and present situation of school supervision and support services, is the endurance of the idea that school supervision is necessary and useful” (Carron and De Grauwe, 1997, p. 18). However, for the potential of school supervision to be realized, education systems in the region will need to revisit how inspectors and pedagogical advisors are selected and trained before taking office and on the job.

**Increasing parental and community involvement and support**

The school effectiveness and school improvement literature is replete with calls for bringing the school closer to the community it is supposed to serve (Anderson, 2002; Carron and Chân, 1996; Heneveld and Craig, 1996; Lockhead and Verspoor, 1991). This is particularly important in contexts such as sub-Saharan Africa, where formal school as it currently exists is a foreign institution and where most parents cannot take part in helping their children learn school-sanctioned knowledge, skills and attitudes, not only because they are illiterate but also because what is valued at school is in general not relevant to their lives.

Parental and community involvement and participation in school affairs has become another strategic drive of school improvement efforts across Africa. School Management Committees, with membership including parents and community members, were a key feature of most donor-supported programs or projects in the 1990s. The importance of parents and communities, in fact civil society at large, in achieving the Education for All goal was re-affirmed at the World Education Forum in Dakar in 2000. It is therefore not surprising that parental and community involvement and participation in school affairs are included in ten of the programs selected for review in this chapter. Work done in Uganda in the framework of the IEQ project is worth highlighting in this respect (Box 8.7.).
Box 8.7. Community support in Uganda

In 1995 IEQ/Uganda began with a national forum to discuss the information needs of the education system. As a follow-up, two large-scale baseline studies were commissioned, which revealed, among other things, significant shortcomings in all components of school effectiveness and proved to be invaluable to the information demands of the education reform. With the stress of UPE on local schools, a research methodology was sought that could not only inform policymakers about the complexities and possibilities of community participation but improve quality learning at the schools participating in the study. In collaboration with IEQ core research team members, three target groups in three rural schools—community members, teachers, and pupils—began Participatory Action Research (PAR). As trust and relationships developed, IEQ researchers began guiding teachers, community and pupil groups through an iterative process of assessment, analysis, and action—back to assessment—leading to improved education quality. Much of the initial discussions with community members were related to quality education but were somewhat removed from school life. Community members began getting a bit closer to schools when they decided to visit some classrooms. They noticed that the classrooms had no desks, benches or lockable doors and window shutters. They were concerned with these conditions. This may have been the catalyst for the community to contribute money and labor to upgrade the classroom conditions. During the next few months, they made desks and benches for grades 1, 2, and 3 classrooms. After a year of engaging in PAR activities, community members have taken further concrete action to improve education quality. They have collaborated with the nation’s TDMS to construct classroom blocks and have begun construction of additional teacher housing. Community members at one school have gone beyond school infrastructure and have begun to seek the assistance of various state and voluntary agencies (e.g., to get a dependable source of sufficient clean water and medical services for the schools). Community members have also become more involved in academic activities. In two schools, they have started monitoring the time that school opens and the time that classes begin. A few of them have observed classes and are beginning to discuss their findings with teachers. These are promising developments as one of the goals of the IEQ-initiated PAR is to eventually bring the community, teachers and pupils together so that they can begin to exchange ideas and take suitable action to improve education quality.

Source: IEQ, 2002, pp. 118-126 (modified)

Building the capacity of the community to support school development is obviously a time-consuming and labor-intensive enterprise, but the results are worth the effort. In many instances, parental and community involvement and participation in school affairs have been framed as a problem of structures; hence the creation of parents’ associations, school management committees and the like. As Carron and Châu (1996) argue, “such organizations usually exist on paper but function poorly or not at all. In and of themselves, they do not guarantee a more positive attitude of teachers to parents, nor a sense of ownership on the part of parents vis-à-vis the school” (p. 278).
The same authors argue further that, in order to break out of the vicious circle in which parental discouragement is met with teacher defeatism, “the most urgent task is probably simply to make the school more welcoming for its users” (p. 278). In the Ugandan case summarized above, this task has been accomplished, and parents have entered the classroom in the both the proper and figurative sense.

**Implications for policy and planning**

The effectiveness of schools is seen not to lie in the specific list of characteristics of discrete additive elements but in the creation of a whole efficient working system, which includes its people, structure, relationships, ideologies, goals, intellectual substance, motivation and will (Lawrence-Lightfoot, 1983, cited in Heneveld and Craig 1995). The cases reviewed in this chapter confirm this point, assuming that Table 8.1 does justice to the programs reviewed. First, none of the factors is taken into account by all the programs. Second, none of the programs takes into account all the factors. Finally, at a more fine-grained level, the table shows that there is wide variation in number of factors taken into account.

The fact that only six programs have “student learning” as an explicit focus is consistent with the findings reported by several authors (Heneveld and Craig, 1996; Hopkins, 2001). Clearly, focus on student learning is a factor as well as a design and implementation principle that should figure prominently in emerging quality improvement programs. But simply focusing on student learning may not suffice. Having a shared vision of the teaching-learning process should be a concern as well, whereby learning is viewed as resulting from the coordinated implementation of input supply, curriculum reform, teacher development, leadership training and training of inspectors and pedagogical advisors, just as Lawrence and Lightfoot (1983) argued. Indeed, no single school effectiveness-enhancing factor, even if its power is statistically demonstrated as determining, can do the job. School effectiveness-enhancing factors interact and influence one another to achieve results. Consequently, paying attention to interactivity and mutual influence of factors at both program design and implementation phases should be ever present in the minds of all categories of actors. In short, this is a call for embracing a systemic approach, acknowledging that the whole is bigger than the sum of its parts. This in turn calls for capacity-building at all levels, given the complexity of the systemic approach.
A second factor that deserves more attention than it currently appears to be receiving is “assessment of student learning.” In fact, if school improvement is for real, this should be built into any school improvement effort as a matter of course. The focus of the assessment and the ways of assessing will obviously vary from one context to another. Nevertheless, it is reasonable to argue that assessment should go beyond cognitive outcomes to include the affective and social outcomes of schooling. Because they are more context-bound than the former, the latter two categories of outcomes pose a great challenge to assessment, but that should not lead to focusing solely on cognitive outcomes, which are more easily measurable. We must bear in mind that in education and in other practices of human improvement for that matter, not all that counts can be measured necessarily, and all that can be measured does not count necessarily!

A third observation on the table is that less than half of the school improvement programs reviewed have “material conditions” as an explicit component. Instead, material inputs such as textbooks, supplemental materials, small classroom equipment, etc., are integrated in a support package, as in PPSE for instance. This may be said to reflect the general trend of focusing more and more on process factors than only on input factors – an encouraging trend. As we saw in Benin’s EQF and Senegal’s FDS, making material conditions an exclusive strategic drive may be as misguided as a strategy that neglects the same material pre-conditions for meaningful change. In the case of FDS, limited attention to pedagogical processes and community involvement were reported as important reasons why the provision of material inputs did not produce the expected results (Guèye et al., 2004). In both cases, subsequent steps were taken or are planned to shift gears. There are many other examples where this happened (e.g., in Madagascar’s Contract Programs; see Ratrema et al., 2004). A supply of essential material inputs is a necessary but not a sufficient condition for effective schooling. On the other hand, given that many sub-Saharan African schools are type 1 schools (in Hopkins’ taxonomy), too much emphasis on type 3 processes may be futile or even counterproductive.

The tendency to focus more on process factors is further illustrated by the fact that the “highest scoring” factors in the table are (i) teacher development, (ii) school leadership, (iii) curriculum and instructional practices, (iv) supervision and support, and (v) parental and community involvement and support. But it may be worth investigating to what extent the often lower than expected outcomes are affected by the often severe shortage of essential learning materials.
in African classrooms. Finally, it is also worth noting that in 12 of the 17 programs, school is considered the unit of change. This is a very hopeful shift in policy and planning, to the extent that it acknowledges the primacy of the human factor in education. It behooves all stakeholders, including international technical and financial partners of African education, to nurture this trend.