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Revitalizing Higher Education in Sub-Saharan Africa

A United Nations University Project Report



Contents

02 Introduction & Acknowledgements

05 *Botswana team*

**Policies and Reforms of Educational Systems in Africa:
A Review of the Current Situation**

By Dr. Theophilus Mooko, Prof. Richard Tabulawa, Dr. Tonic Maruatona and Dr. Anthony Koosimile (University of Botswana)

I. INTRODUCTION

II. CONCEPTUALIZATION OF EDUCATION FOR ALL AND THE MILLENNIUM DEVELOPMENT GOALS

III. EMERGING INNOVATIVE APPROACHES

IV. THE WAY FORWARD — POSSIBLE EDUCATIONAL POLICY PRIORITIES

REFERENCES

31 *Senegal team*

**Innovation and Revitalization of Education in Sub-Saharan Africa:
Educational Programmes, Pedagogy and Teaching Tools**

By Hamidou Nacuzon Sall, Baye Daraw Ndiaye, Bakary Diarra and Mouhamadoune Seck (UNESCO Chair in Education, Faculté des Sciences et Technologies de l'Éducation et de la Formation (FASTEF), Université Cheikh Anta Diop, Dakar-Senegal)

I. INTRODUCTION

II. EDUCATIONAL PROGRAMMES

III. SPECIFIC EDUCATIONAL PROGRAMMES

IV. PEDAGOGY AND TEACHING METHODS

V. TEACHING AND TECHNOLOGICAL MATERIAL

VI. CONCLUSIONS

BIBLIOGRAPHIC REFERENCES

67 *Ghana team*

Research on Education in Africa with Specific Reference to Ghana

By Cosmas Cobbold, Joseph Ampiah Ghartey, Fiifi Mensah and Fred Ocansey (University of Cape Coast, Ghana)

EXECUTIVE SUMMARY

I. INTRODUCTION

II. THE EDUCATION SYSTEMS OF AFRICAN COUNTRIES

III. EDUCATIONAL ACCESS, EQUITY AND QUALITY

IV. TEACHERS, TEACHING AND TEACHER EDUCATION

V. NATIONAL INITIATIVES TO IMPROVE THE QUALITY OF EDUCATION

VI. POLICY RECOMMENDATIONS

REFERENCES

91 **Mozambique team**

Innovation in Teacher Training in Sub-Saharan Africa

By Dr. Zacarias Alexandre Ombe, Mr. Jaime Alipio and Mr. Arnaldo Nhavoto (Pedagogical University of Mozambique)

- I. INTRODUCTION
- II. THE NEED FOR INNOVATION IN TEACHER EDUCATION
- III. TEACHER TRAINING STRATEGY IN SSA
- IV. EDUCATION PROBLEMS IN MOZAMBIQUE
- V. SUCCESS STORIES IN TEACHER TRAINING IN SSA
- VI. CONCLUDING REMARKS AND RECOMMENDATIONS
- REFERENCES

105 **Senegal team**

A Strategic Paper

By Hamidou Nacuzon Sall, Baye Daraw Ndiaye, Bakary Diarra and Mouhamadoune Seck (UNESCO Chair in Education, Faculté des Sciences et Technologies de l'Éducation et de la Formation (FASTEF), Université Cheikh Anta Diop, Dakar-Senegal)

- I. EDUCATIONAL PROGRAMMES OR CURRICULA
- II. SPECIFIC PROGRAMMES
- III. PEDAGOGY AND METHODS
- IV. TEACHING TOOLS AND TECHNOLOGY

112 **Conclusion**

LIST OF BOXES AND TABLES

In: Innovation and Revitalization of Education in Sub-Saharan Africa

- Box 1: Conception and management of curriculum reforms
- Box 2: Implementation of the Ten-year Education Development Plan/PPDE. Framework of Guidelines for Curricula.
- Box 3: Liaison Newsletter of La Main à la pâte – special international supplement of issue 30, February 2005.
- Box 4: UNOCI launches education for peace for young people in Côte d'Ivoire
- Box 5: Sub-regional Seminar on the Diagnosis and Elaboration of Reference Documents for Education on HIV/AIDS in the School Systems of CEMAC Countries plus the Democratic Republic of Congo
- Box 6: Education et Pauvreté, Le cas de l'Afrique
- Box 7: Ten-year Programme for Education and Training (PDEF). Economic and Financial Report 2005. Provisional Report
- Box 8a and 8b: ICT and Education

In: Innovation in Teacher Training in Sub-Saharan Africa

- Table 1. The challenges of education for sustainable development in Mozambique, and the need for innovation in education practices and policies
- Table 2. The impact of wage ceilings in Malawi, Mozambique and Sierra Leone
- Box 1: Tanzania. Accelerated teacher training
- Box 2: Ethiopia. Post-graduate diploma in distance education
- Table 3. Teachers with and without pedagogical training in public schools by province and sex
- Table 4. Number of trained and untrained teachers between 1993–2002
- Table 5. Components of the Crescer programmes
- Box 3: Japan. The Japanese example

Introduction

Achieving the objectives set by the international community in the field of education is a permanent challenge for most African countries. The education sector is in a particularly difficult situation in sub-Saharan Africa where poverty and its consequences, including hunger, illiteracy, uncontrolled population growth, a deteriorating environment, pandemics such as HIV/AIDS, malaria and TB, are part of people's daily lives.

At the primary level, the enrolment rate increased from 57 per cent in 1999 to 70 per cent in 2005, although in many countries children from the poorer families remain excluded. Some 33 million children of primary school age were not accessing education as of 2007. Furthermore, the school-life expectancy of children in Africa remains very low compared with other regions of the world. Gender equity also is under question: for every 100 boys attending school and completing the cycle, 89 girls obtain some education, while 76 women are literate for every 100 men. Illiteracy and poverty are interrelated, the first paving the way to the second.

As far as quality is concerned, inadequate mastery of education programmes, the application of rigid teaching practices, the lack of teaching materials and insufficient teaching time are some of the factors hindering achievement of the objective of quality. Among the reasons that could explain the inadequate learning outcomes in the region are the shortages of teachers, resulting in overcrowded classes with pupil-teacher ratios that can be as high as 70:1 or even 100:1; it is estimated that at the primary level, the pupil-teacher ratio was at 45:1 in 2005 (worsened from 41:1 six years earlier). In addition to the shortage of teachers, the poor standard of qualification of teachers and the poor quality of training further qualify the situation. HIV/AIDS also is having disastrous effects, not only for teaching staff but also for school children and their parents and families. (School adult literacy programmes are one of the most effective weapons to counter the pandemic.)

When considering the secondary school level, the enrolment rate amounts to 48 per cent in the first cycle and 23 per cent in the second cycle, compared with an average of 58 per cent for all developing countries. Some

African countries have very marginal access, below 20 per cent, while others have almost achieved universal primary education at 80 per cent. Drop-out and repeat rates remain high, especially in the lowest income countries. The shortcomings noted at the primary level persist at the secondary level, with overcrowded classrooms, in particular in urban areas, unsuitable training programmes, lack of quality education materials, and shortfall in quantity and quality of teaching staff.

Pedagogical methods give priority to approaches centred on memorization and restitution. Few schools focus on teaching that encourages children to develop their intelligence and creativity, instilling a good sense of innovation and training for research activities. Major social issues (in particular, civic instruction, health and ethical values) are not given sufficient consideration, and there is a lack of linkage between education and working life. The special needs of persons with disabilities, those with lower incomes, or those located in more isolated areas are rarely taken into account. Although technical and vocational education (TVE) can enable younger citizens to access quality post-basic education, few students are sufficiently prepared to cope with new trends in a rapidly changing world, or with job markets that require people to improve their qualifications and constantly renew knowledge while engaging in a lifelong learning process.

In higher education, the situation reflects that prevailing at other levels of the education system. Although the system developed considerably in terms of quantity starting from the 1990s, the studying conditions are not keeping track with the increasing number of students. Lecture halls are overcrowded, while laboratories and library facilities are insufficient and the living conditions precarious. In fact, because of the shortcoming observed at the basic and general and technical secondary levels, students are not sufficiently prepared for higher education. Higher education is marked by a low internal and external efficiency that contributes insufficiently to the development of the country, poverty reduction and improvement of other levels of the education system. The use of information and communication technologies continues to be relatively low.

Faced with inadequate training and research conditions and low scholarly incentives, there is a strong temptation for many among the brightest students and teaching staff to seek better living conditions in other countries or regions. The dramatic situation prevailing in Africa will not be reversed unless we find solutions to reduce the deterioration of the education system in the region. It is, therefore, urgent to seek for answers to the key questions that arise when analysing the situation of the education systems in Africa. All efforts have to be mobilized to help turn education into a development lever that brings solutions to problems affecting society, taking into account the Millennium Development Goals (MGDs). The solutions further lie within the African higher education system itself, in particular through the increased accent on improvement of research and innovation.

Four fields of actions are taken into account in order to increase the quality and the relevance of the education system: policy and reform of the education system in Africa; the programmes, pedagogy and teaching tools; the training of teachers; and research in education.

Four universities were selected from the main sub-regions and the different linguistic zones to build pilot teams able to prepare working documents on the situation in each of the four domains selected. These four universities — in Botswana, Ghana, Senegal and Mozambique — are expected to move towards forming pilot resource and innovating centres to serve as think-tanks, and to submit constructive proposals to decision makers and institutions in Africa. The findings they highlight should contribute to bridging the gaps of the level of knowledge between the academics and political communities.

A SUMMARY OF THE CONTRIBUTIONS

Policies and reforms of educational systems in Africa (Botswana team)

This contribution emphasizes what policies should be adopted to facilitate implementation of the Education for All goals, in particular to:

- improve the achievement rate at the primary level,
- improve educational quality and gender equity, and

- take into account the problem of HIV/AIDS, national languages and cultural dimension, and the role that education can play to attain the Millennium Development Goals.

Programmes, pedagogy and teaching tools (Senegal team)

This reflection focuses on the following topics:

- adoption of programmes in keeping with national realities;
- organization of teaching based on problem-solving and coherence between theory and practice;
- renewal of teaching methods and practices;
- incorporation of new information and communication technologies into education;
- transmission of the fundamental values of society;
- problems related to HIV/AIDS;
- the teaching of science and technology;
- problems of education in emergency situations, and for the benefit of excluded populations; and
- relationship between culture and education.

Research in the field of education in Africa (Ghana team)

The document investigates the following areas:

- the policies to be adopted to ensure an effective contribution to research on the development of education in Africa;
- successful initiatives in the area of research and innovation;
- development of human resources and the motivation of researchers;
- financing of research on education in Africa; and
- definition of priorities in terms of the contribution of research to the development of education: poverty reduction, impact of HIV/AIDS, improved efficiency and quality, and the impact of technologies on the results of education.

Training of teachers in Africa (Mozambique team)

This paper takes the following priorities into consideration:

- development of national policies in the field of teacher training;
- promotion of a teaching system centred on the student;
- development of the qualities of initiative and autonomy;

- encouragement of a team spirit
- fostering of an interest in research
- use of available resources to acquire self-training capacities;
- development of a capacity to produce teaching tools;
- use of new information and communication technologies;
- the practice of inter-disciplinarity;
- training of teachers as national development agents; and
- South-South and North-South co-operation in the field of teacher training.

Strategic innovations (Senegal team)

This paper offers recommendations for innovating educational programmes, pedagogy, teaching methods, teaching tools and technology.

Acknowledgements

Professor Francisco Komlavi Seddoh, Adviser to the Rector on African Issues, UNU, was the coordinator of the project and team leader of this report. Soisik Maubec, Programme Officer in the Office of the Rector, UNU, assisted with the preparation and coordination of the report.

Acknowledgments are also due to Pierre Kouraogo, Associate Professor of Applied Linguistics at the training and research unit (UFR-LAC) of the University of Ouagadougou, Burkina Faso, for his valuable advice and contributions to the editing of the report. Nieves Claxton, UNU Office at UNESCO (Paris, France) provided support for the translation of documents.

The UNU Office of Communications managed copy editing and overall coordination of the design, production, and printing of the report, with the support and assistance of Mori Design Inc. (and, most specifically, Haruki Mori).

Botswana team

Policies and Reforms of Educational Systems in Africa: A Review of the Current Situation

By Dr. Theophilus Mooko, Prof. Richard Tabulawa, Dr. Tonic Maruatona
and Dr. Anthony Koosimile (University of Botswana)

I. INTRODUCTION

This paper offers an exploration of policies and reforms of educational systems in Africa within the context of both Education for All and the Millennium Development Goals. Specifically, the paper seeks to address the question of: What policies should be adopted to facilitate the implementation of the Education for All goals: in particular, to improve the achievement rate at the primary level, improve educational quality and gender equity, and take into account the problem of HIV/AIDS, national languages and cultural dimension, and the role that education can play to attain the Millennium Development Goals?

The paper is divided into three sections:

- Section II provides a conceptual understanding of Education for All and the Millennium Development Goals.
- Section III then showcases some of the innovative approaches that have been developed in Africa. The presentation demonstrates that Africa has the potential not only to confront the challenges it faces, but also to overcome them, and unearth some of the innovations that African states have embarked upon. It is hoped that those countries still struggling with some of these challenges can learn from the success stories documented here. These stories illustrate the fact that success is a product of a complex interaction of various factors; whereas countries do not need to replicate what others have done, they nonetheless can learn from them and develop strategies that could work for them.
- Section IV briefly summarizes some of the educational policy priorities that Africa needs to consider as it endeavours to attain the ideals of Education for All and the Millennium Development Goals. These identified policy priorities have been set within the context of the identified educational challenges prevailing in Sub-Saharan Africa.

II. CONCEPTUALIZATION OF EDUCATION FOR ALL AND THE MILLENNIUM DEVELOPMENT GOALS

II-1. Education for All — Origins and subsequent developments

Education for All (EFA) represents the world's commitment to provide education to all who are eligible. EFA encompasses pre-primary, primary, secondary, tertiary and adult education. It is a multi-faceted challenge requiring simultaneous attention to access, equity, quality and relevance. Quite often, however, some of these facets may conflict (for example, it is common that when access to schooling improves, quality declines).

The world's commitment to the provision of education to all has a long history. The first such commitment was in 1948, when the Universal Declaration of Human Rights (UDHR) was published. In that declaration, education was recognized as a fundamental human right for the multifaceted development of individuals and of society. In particular, it was declared that elementary education should be free and compulsory and that the higher levels of education should be accessible to all on the basis of merit (United Nations, 1948, Article 26).

Two routes have been used to realize the commitments of the UDHR: (1) the use of treaties as instruments and (2) the use of declarations of conferences convened by the United Nations to secure human rights observance. An example of the former is the International Bill of Human Rights (constituted by instruments such as the International Covenant on Civil and Political Rights (ICCPR) and the International Covenant on Economic, Social and Cultural Rights (ICESCR)). The conventions provide for compulsory and free primary education. The Convention on the Elimination of all Forms of Discrimination against Women (1979) and the Convention on the Rights of the Child (1989) — the two most recent conventions — have very strong guarantees of children's right to education. The use of the second route (conference declarations) came in the form of UN-organized conferences, such as the 1990 Jomtien World Conference on Education and the 2000 Dakar Framework for Action, and the Millennium Declaration. All these instruments

restated the commitment to universal primary education, with the Millennium Declaration going further by setting time-bound targets.

II-2. The role of education

But why was education made such a critical focal point of the socio-economic and political development of nations in the first place? A number of reasons can be adduced.

The first was the horror of World War II. In emerging from the devastation of that war, the world was eager to usher in a new world order. It was envisaged that education would have a role to play in the evolution of that new order. Education became an important tool for the formation of citizenship. The world would become a better place if people, all around the world, developed to their full potential, it was thought. It was the task of education to inculcate this civic responsibility, with the ultimate objective being inculcation of a democratic ethos.

Second, the post-World War II egalitarian Welfare State obligated the state to provide for the citizen in exchange for improved productivity. Under this contract, services such as education, housing and health were to be provided by the state, free of charge; that is, they were public goods. Note that this resonates with the spirit of the 1948 Universal Declaration of Human Rights. In short, the Welfare State was conceived as the best vehicle for the delivery of the envisaged new world order based on the ideology of respect for human rights.

In the 1970s and 1980s, the view of education as a “public good” was given impetus by the evolution of human capital theory, which in turn led to a new field of study: Economics of Education. Studies by the likes of Gary Schultz and George Psacharopoulos purported to have established a positive relationship between schooling and economic growth. They argued that both the individual and society benefited from an educated populace — i.e., that investing in education had both private and social rates of return. The argument was that “a more educated society may translate into higher rates of innovation, higher overall productivity through firms’ ability to introduce new and better production methods, and a faster introduction of new technology” (EFA Global Monitoring Report, 2005, p.

41). The social rates of return to education were stressed. If it was society at large that benefited from investments in education, then it was the obligation of the state to provide free education to its citizens. With egalitarianism as a guiding philosophy, most countries in the West provided free or highly subsidized education in the 1960s and 1970s.

Human capital theory did not escape the attention of world bodies such as the World Bank. Impressed by studies carried out by economists of education, the World Bank endorsed the view that, indeed, education (in particular, primary/basic education) had an impact on economic growth. In the view of the Bank, this was particularly true in the case of developing countries. In the 1970s, the World Bank championed and funded basic education in developing countries. It argued that the provision of basic education in developing countries would boost productivity and technological transfer, leading to improved economic growth. In other words, investment in basic education yielded higher social rates of return. Therefore, it was imperative that developing countries provide basic education. These arguments were a boost for universal primary education.

In 2000, the United Nations General Assembly adopted the Millennium Declaration. In devising a plan for achieving the objectives of the Declaration, the Secretary General, with the help of the World Bank, the International Monetary Fund (IMF) and the Organisation for Economic Cooperation and Development (OECD), came up with 8 goals, 18 targets and 48 indicators that collectively came to be known as the Millennium Development Goals (MDGs). The MDGs are “a set of time-bound and measurable goals and targets designed to decrease poverty, hunger, disease, illiteracy, environmental devastation and discrimination against women” (Wagner, 2007:2). The MDGs represent probably the first-ever effort on a global scale to have all countries committing themselves to solve world problems. All governments are obliged to have in place programmes and strategies that will ensure achievement of the MDGs by 2015.

How, then, have these developments affected the provision of education in Africa? As has been observed in the introduction, Education for All as a concept is all-encompassing, as it includes pre-primary, primary,

secondary, tertiary and adult education. Also encompassed by EFA is Universal Primary Education (UPE) and Basic Education (BE). These two concepts, in fact, form the general education component of education systems in Africa. These are the aspects of EFA that are best developed, as they are the only ones that could be said to be closest to offering education for all. The secondary and tertiary sub-sectors are grossly under-developed in Africa, to the extent that it would not be realistic to talk of achieving education for all at these sub-sectors in the near future in Africa.

For this reason, discussion of EFA in this report confines itself largely to the provision of universal primary education and basic education. Other sub-sectors are mentioned only where relevant. For ease of reference, we adopt the term Universal Basic Education (UBE, instead of UPE and BE separately) as it encompasses both UPE and BE. Some countries — for example, Botswana — offer basic education that is not confined to the primary education stratum, as is the case in most African countries that purport to offer some sort of “basic education”. In Botswana, “basic education” comprises the first 10 years of a child’s formal education (i.e., 7 years of primary and the first 3 years of a five-year secondary education) as well as the non-formal education sub-sector, whereas in other countries it is only basic primary education that is universal.

II-3. Universal basic education in Africa

The developments sketched above had tremendous impact on basic primary education provision in Africa as a whole. The public-good view of education prevalent in the 1960s and 1970s found its way into the education policies of most African countries. Two major forces were at work here. First was the need for an educated/literate population to propel the development agenda at independence. When many African countries attained independence in the late 1950s and 1960s, they had very serious human resources constraints that impeded the burgeoning of the modern sector — hence, the development of manpower planning strategies in third-world countries such as Botswana. The need to develop those resources was immense. (Note that Africa’s independence coincided with the rise of the human capital theory.)

Second, the emergence of the African nation-state from the various fiefdoms and kingdoms required that robust nation-states be built. Education was viewed as the “glue” that could hold together the various kingdoms and ethnicities into nation-states. Developing basic primary education, therefore, became a priority for the emerging governments. However, although the will was there to provide basic primary education to all, this was not realized because of resources constraints. For this reason, education remained a privilege for only the few who could afford it. By 1990, only a handful of African countries could claim major strides in the provision of basic primary education. The Jomtien Conference, however, gave impetus to the development of primary education in the continent.

One may ask: Why basic education? Here, the influence of the World Bank and the OECD is obvious. These bodies believed that rates of return for education in developing countries were highest at the primary school levels simply because of its (education’s) scarcity. Therefore, it made sense to invest more in basic education. Conversely, the rates of return for education were lower at the senior secondary and tertiary levels, requiring less investment in infrastructure at these levels. If basic education sufficed in equipping students with skills that made them economically productive, it only made sense to invest more in that. With this view now legitimated by the World Bank and the OECD, it soon became dogma around the world. Subsequently appropriated by bilateral aid agencies, the dogma became an important aspect of these agencies’ educational discourse. Through policy advice, these agencies ensured that the discourse permeated education thinking in developing countries, in the process reshaping educational priorities in favour of the basic education stratum.

An important external factor is the growing importance of knowledge for the global economy and its centrality in nations’ readiness for global competitiveness. The rise of the so-called Knowledge Economy demands a highly educated population with technical skills essential for increased productivity. In this regard, basic education no longer suffices. Rates of return for basic education have diminished. The Bank of Botswana recently reported that a very high percentage of school leavers are unemployed

in Botswana. This attests to the diminished value of basic education. These developments are calling for attention to be shifted to areas that hitherto were neglected: the senior secondary and tertiary education strata. Most countries have developed tertiary education policies that seek to modernize higher education so that it can face up to the challenges of producing people who can generate knowledge that can be technically exploited to boost those countries' global economic competitiveness.

Of course, progress in the provision of universal basic education in Africa differs from one country to another. Countries such as Mauritius, South Africa, Botswana and Uganda have made the greatest strides, attaining almost 100 per cent universal basic education. Riddell (2003) observes that the first year of free primary education in Malawi saw enrolment increasing by over 50 per cent, from 1.9 million in 1993/4 to about 3.2 million in 1994/5. In Kenya, the announcement of the introduction of free primary education in 2002 saw enrolments surge from 6.0 million to 7.2 million in 2003. In Zambia, the first year of free primary education (2002) saw enrolment growing by 7 per cent, compared with only 2 per cent in 2001.

But this phenomenal growth in primary education enrolment across all countries has put a strain on the quality of education. For example, as a result of primary education population surges, teacher–pupil ratios have worsened. Mozambique, in its endeavour to increase access to primary education, encountered problems related to a lack of teachers as well as a lack of resources, such as insufficient classrooms, desks and chairs for children. In Tanzania, it was reported in 2005 that at one school, there were 2,300 pupils who were taught by only 50 teachers (Nkosi, 2005). This came about as a result of the introduction of free primary education, funded mainly by external donors. Nkosi's assessment is that while Tanzania is on the way towards attaining the UN Millennium Development Goal of free primary education, the quality of that education has been compromised in the process.

The introduction of basic education in Africa was largely unplanned. It was a sudden process, seen by some as a political stunt. There were no prior considerations of the likely impact of such improvements on the capacity of the system to handle the massive increase in the number of

students entering the education system. The underlying fact seems to be that the African education system does not have the capacity to handle some of the reforms due to resource constraints, and probably also because of a lack of creativity. But Africa cannot wait until those resources are procured. In terms of policy, what is needed are innovative approaches that while ensuring access to free primary education do not, on the other hand, lead to a decline in the quality of education.

As already mentioned, some countries in Sub-Saharan Africa have achieved the goal of providing universal basic education and are now moving towards providing universal secondary education. Botswana has set itself the target of achieving universal secondary education by 2016. Uganda also has started its implementation of this target. The main hurdle that has been encountered so far in Uganda has been a shortfall in the number of teachers required to teach at this level. Although some countries have achieved the broader MDG 2 (that of access to Universal Primary Education), challenges remain. The picture becomes less rosy when we zero-in on the individual targets of the MDG 2, namely retention and quality education. For example, when it comes to retention, it is reported that 17 per cent of school-age children are missing from school in Botswana.

With regard to quality and relevance, it generally is agreed that more needs to be done. It is one thing to achieve 100 per cent access, but another to provide high-quality, relevant education. Issues of retention and quality remain big challenges, and should form part of any proposal to improve education in Sub-Saharan Africa. The issue of retention could be addressed by making education, particularly primary education, compulsory.

II-4. Quality issues in education

On the quality front, policies need to be developed that will ensure improvement of the quality of education provided. It is generally accepted in the literature that the concept of quality is a contested one, primarily because it is a relative (as opposed to absolute) concept. What might be considered as quality education today may not be quality education tomorrow. For this reason, it is pointless to search for a fixed definition of "quality education". Rather, it is conventional to describe quality in education in terms

of such indicators as the percentage of trained teachers, pupil–textbook ratios and pupil–teacher ratios.

Definitions of quality education vary from those that look at technical indicators to those that view it as an indication of the outcomes of a concerted progressive process. For example, Hawes and Stephens (1990) define it as a process that requires “efficiency in meeting the set goals, relevance to human and developmental needs and conditions, something more in relation to the pursuit of excellence and human betterment” (p. 11). In a similar vein, Bandary (2005) states that it encompasses a range of elements including the level of student achievement; the ability and qualification of staff; the standard of facilities and equipment; the effectiveness of teaching, planning and administrative processes; and the relevance of programmes to the needs of students and the nation in an emerging global knowledge economy (p. 185).

However, others view quality as both a process and a critical indicator of expected outcomes. Schaeffer (1992) asserts that quality education involves how people are mobilized and empowered through the provision of knowledge and skills to enable them to participate in the democratic structures of their societies. What is paramount is that quality should be defined in terms of “fitness for purpose” — i.e., whether the education provided is of good or poor quality depends on the degree to which it (education) measures up to the stated ideals, goals and objectives (purpose).

In spite of the variations in categorical definitions, there is a clear consensus that the provision of education is not only a quantitative process, but is also unashamedly qualitative. The Dakar Framework for Action in 2000 recognized the quality of education as a primary determinant of whether or not Education for All is achieved. The second of the six goals of the Framework committed signatory nations to the provision of primary education “of good quality”, while the sixth goal implored nations to make a commitment to improve all aspects of education so that everyone can achieve better learning outcomes. The process of teaching and learning thus has to invariably uphold the ideal of a child-centred education.

The *2005 Global Monitoring Report of UNESCO (2004)* notes that it seems the achievement of universal participation in education will be fundamentally dependent upon the quality of education available. Expanding access to education alone is not sufficient for it to contribute fully to the development of the individual and society. The Dakar Framework for Action declared that access to quality education was the right of every child, and that quality should be placed “at the heart of education” since it’s a fundamental determinant of enrolment, retention and achievement. The process will be based on how well pupils are taught and how much they learn, which in turn will influence how long they stay in school or the regularity of their attendance. Furthermore, whether parents continue to send their children to school will depend on their informed judgements about the quality of teaching and learning. Education, therefore, is viewed as a set of processes and outcomes that are defined qualitatively. Thus, it is imperative that any attempt to engage in the reformation of educational policy in Africa be premised on addressing issues of quality.

Closely tied to quality is the issue of relevance. Quality may be a reflection of relevance, or its derivative. Quality education must be relevant to the needs of its recipients; irrelevant education, no matter how well articulated and aligned its various components may be, is poor-quality education. Such education has implications for efficiency of the system, retention, repetition, attainment and drop-out rates. Good examination results, as long as they do not measure these stated qualities, can never be indicative of quality education.

The challenge facing African nations, therefore, is the need to set clearly articulated institutional missions that stipulate, in no vague terms, the kind of person that they wish their education systems could produce. Once this has been done, then ways of going about producing this ideal character can be formulated with clear articulation and alignment amongst pedagogy, assessment and curriculum. An area with great research potential is whether African nations have well-articulated and -aligned missions, goals and objectives against which quality could be measured.

III. EMERGING INNOVATIVE APPROACHES

In this section, we will examine some of the emerging innovative approaches. These innovations have been explored in relation to some of the prevalent educational challenges with which Sub-Saharan Africa has to contend. Some of the recurring themes in this regard are issues such as access, equity, quality and relevance.

III-1. Early childhood care and education

One of the Education for All goals has been articulated as “expanding and improving comprehensive early childhood care and education, especially for the most vulnerable and disadvantaged children”. Access to early childhood education is an important determinant of performance at the primary school level. Thus, early childhood care and education (ECCE) serves a vital role of initiating children into the school culture. Children who have gone through such initial education are better equipped to cope with the demands of primary education, as they would have been introduced to some basic literacy elements prior to enrolling in primary school.

This benefit does not preclude the fact that children develop at different paces; hence, the provision of ECCE does not automatically confer equal benefits upon all children. It is nonetheless a truism that ECCE can contribute towards the provision of quality education. This can occur when ECCE provides the learners with an early start, enabling primary school teachers to take the students to another level.

Access to early childhood education is still limited in Sub-Saharan countries; fewer than 5 per cent of eligible children are enrolled in any form of early learning programme. For example, Botswana had only 27 per cent of children aged 3 to 6 years receiving such instruction in 1997. The majority (54.6 per cent) of those who benefited from this education resided in urban centres. Pre-school education is not free in Botswana; consequently, access is limited not only because there are few providers, but also because of affordability.

The situation in Botswana mirrors that which prevails in most Sub-Saharan countries. The typical feature is that there is better access to ECCE in urban areas than in rural areas. In addition, it is children from the richer families who have access to such education. Government involvement also is generally limited; most governments provide no financial backing for such education, and it often is left to private providers. It is interesting to note that whereas commendable strides are being made with respect to the provision of primary education, provision for ECCE is still lagging behind. There are, nonetheless, some innovative experiences that can be presented here.

Mauritius and the Seychelles provide some of the success stories in Africa in the provision of early childhood education. Currently (2007), Mauritius provides early childhood education to 94 per cent of children aged between 3 and 5 years. By 2004, Seychelles was able to provide this level of education to 85 per cent of children aged 3.5 to 5 years. The strides that Mauritius has made in this area can be attributed to three factors: (1) the utilization of classroom space in some primary schools for ECCE; (2) financial assistance to private providers through soft loans, which has enabled these providers to improve their facilities; and (3) the construction of a pre-primary school in primary school facilities. As for the Seychelles, the gains are a result of the provision of free pre-school education by the government in addition to that provided by private providers. Also, the pre-schools are located close to the district primary schools (Purvis, 2004).

The experiences of these two countries demonstrate the importance of government involvement in the provision of ECCE. Governments need to appreciate the value of investing in this area, even in instances where most of the services are provided by non-governmental organizations. In addition, these case studies reflect the need for countries to be creative when approaching challenges in the educational sector. The utilization of some underutilized school infrastructure for the purposes of offering ECCE is one such innovation that is worth mentioning. This not only assists in the optimal utilization of available resources but also widens the use of the facilities to meet the diverse educational needs of the nation. In the process, the provision of education becomes

more cost effective — an essential factor in Sub-Saharan Africa where resources are limited.

III-2. Enhancing primary school enrolment rates by providing free education

The 2007 *Millennium Development Goals Report* notes that some progress has been made by Sub-Saharan countries in their quest to achieve universal enrolment (though a lot remains to be done). It is reported that “Although sub-Saharan Africa has made significant progress over the last few years, it still trails behind other regions, with 30 per cent of its children of primary school age out of school” (United Nations, 2007:11).

Most countries in Sub-Saharan Africa have reported a Net Intake Rate (NIR) of around 30 per cent or lower; at the other extreme, a few countries have attained an NIR of above 95 per cent. These countries apparently have put into practice a policy of universal primary education (UNESCO, 2000:38). Primary school fees have been abolished in several Sub-Saharan African countries; Botswana did so in 1980.

According to the 2007 report, some of the countries that have recorded a surge in primary school enrolment include Ghana, Kenya, Uganda and the United Republic of Tanzania. The gains demonstrate the fact that free schooling has a significant impact on school enrolment, and it is crucial for the attainment of the EFA goal of achieving universal primary education.

III-3. Tackling indirect educational costs

The provision of free education is not sufficient on its own, as very often there are other indirect costs that families have to incur. Indirect educational costs, such as uniform fees, textbook fees or transport levies, can seriously impede access to education. There are some noteworthy innovative approaches, however, that some countries have pursued in their quest to deal with such indirect costs that may limit children’s access to free education.

Ghana offers a good example on how this problem can be tackled. The government of Ghana has introduced:

“... Free Bus Riding for School Children in uniform from kindergarten to JSS level. Reports indicate that over 100,000 pupils enjoyed the MMT [Metro Mass Transit] Free Bus Riding System within one week after introduction in Accra alone. It is expected that about 25, 000 pupils will ride free to and from school every day throughout the country under this scheme.”

(<http://www.mofep.gov.gh/documents/LoanMassTransport.pdf>)

Such a scheme is essential in supporting free education, as it assists in cutting down education-related costs that families have to incur even in instances where free primary education is available. The provision of free transport also assists in dealing with the distance problem, which in some instances has made it difficult for children to access education. This arrangement also will go a long way towards assisting Ghana to realize its goal of offering compulsory free basic education.

Prior to the introduction of the free bus scheme, Ghana had abolished all school levies (in 2004). The results of this intervention have been summed as follows:

“The results were immediate and stunning. Over two academic years, enrolment in public basic schools surged from 4.2 million to 5.4 million. The gross enrolment ratio in primary schools reached an all-time high of 92.7%. Children from some of the poorest families and most remote communities poured into school for their first opportunity to learn. In one family, as soon as the news about the levies spread, a mother rushed out to bring home her 10-year-old daughter, whom she had reluctantly sent away to work and earn income for the family. In one industrial area which employs a large number of apprentices in auto mechanical engineering between the ages of 11 and 20, schools suddenly became over-enrolled. These trainees now go to school in the morning and learn their trade in the afternoon.”

(BBC News, Friday, 14 July 2006;

http://news.bbc.co.uk/2/hi/uk_news/education/5181852.stm)

In order to compensate for the lost income resulting from the abolishment of school levies, the government of Ghana had to explore other means of generating revenue for schools. To replace the lost revenue, the government introduced capitation grants paid directly to the schools (ibid).

Some of the strategies that have been adopted to circumvent the problem of indirect educational costs include doing away with the requirement for school uniforms. This has been implemented in Malawi, Tanzania and Zambia, for example. In all these countries, a school uniform is not compulsory (Riddell, 2003). Although the abolishment of school uniforms has both merits and demerits, the underlying philosophy guiding the adoption of such a policy is the need to lessen the financial burden that parents have to contend with. As will be noted later, Botswana has not eliminated the requirement for school uniforms at either the primary or secondary school level. What has been done is that the government provides orphans with the needed school uniform. In this manner, orphans are cushioned against the financial costs related to the need to wear a school uniform.

III-4. Provision of free textbooks

Learners need to have access to learning materials, such as textbooks. Access to textbooks is an important factor in the provision of quality education. In some countries, however, children still have to buy such materials.

In Botswana and Gambia, school children are provided with free textbooks. Burkina Faso also has launched a campaign of massive distribution of textbooks as part of its newly adopted free basic education for all policy. The provision of free textbooks to all children transfers the burden of such costs from parents to the state. This not only contributes to quality education in terms of the availability of textbooks for learners, but also facilitates equity in access to education for children from diverse backgrounds. In Botswana, the textbooks belong to the schools; the learners are expected to return them to the school at the end of the year so that they can be reissued to the next group of students.

III-5. Introduction of compulsory education

The provision of free education, as presented above, clearly demonstrates that free schooling can enable countries to move closer to realizing this goal. Unfortunately, however, free education will not always result in increased enrolments. There also is a need to make the education compulsory in order to meet the second EFA goal,

which is aimed at “Ensuring that by 2015 all children, particularly girls, children in difficult circumstances and those belonging to ethnic minorities, have access to, and complete, free and compulsory primary education of good quality”.

Making education compulsory will compel parents to send their children to school. There is, nonetheless, a need to create an environment that is conducive for the implementation of such a policy. One such strategy is the elimination of indirect educational costs. The case of Ghana, already cited above, illustrates that a concerted effort by the government can enable the country to do that.

Uganda also has ventured into the provision of compulsory education amongst some of its vulnerable citizens. Reuters reported in September 2007 that the country was introducing compulsory education in the trouble-torn area of Karamoja (<http://www.alertnet.org/thenews/newsdesk/L18789335.htm>). The government will build boarding schools for the children, and it is hoped that the provision of such facilities will assist in encouraging parents to send children to school. The approach adopted by Uganda illustrates the fact that governments need to tailor their efforts to meet the unique circumstances prevailing in their countries. The provision of boarding facilities will result in increased educational expenditure, but this is an investment that needs to be made in order to transform the lives of the people living in this trouble-torn region. Uganda’s approach also should serve as an example for other nations that have to contend with conflict situations.

III-6. Gender equity

One of the most strategic indicators of policy reform in education is efforts by nations to address gender equity through enhancing the participation of girls and women in all forms of education. The 1990 Declaration on Education For All was reiterated when all nations at the World Education Forum agreed and noted that there should be a delivery of quality education for girls and women. They also made a unanimous commitment to make efforts to remove all forms of barriers and stereotyping that could hinder the active participation of girls and women in education (UNESCO, 2000).

In 2000, close to two-thirds of all illiterate people were female, representing 240 million more female illiterates than males. The most pronounced gender inequity exists in the South and West Asia, Sub-Saharan Africa, North Africa and the Arab States. The gender gap, unfortunately, correlates with poverty, as it both causes and is a direct consequence of it (ICAE, 2003). Africa was a signatory to the Dakar Framework for Action, one of the six goals of which is geared towards ensuring that the learning needs of all young people and adults are met through equitable access to appropriate learning and life skills. The Framework also called for a 50 per cent improvement in the levels of adult literacy, especially for women, by 2015. This requires that a major policy reform be undertaken with a focus on how Africa ensures that its provisions address gender equity.

Problems of access to education are varied and complex. Boys still participate actively as a labour resource in the traditional cattle-herding economy, the main subsistence economic activity in the rural hinterland. Similarly, some females are not yet relieved of such socio-cultural obligations as marrying at a young age or taking care of siblings and the sick in the family. These factors complicate the question of access to education. Also, some schools in Botswana, for example, are inaccessible to school-age children due to the location relative to their homesteads. Travelling long distances to school is a disincentive for all ages.

There is an interesting trend that points to the fact that efforts geared towards redressing gender equity are beginning to yield fruit in a few countries in Africa. For example, the gender gap observed in Zambia was dramatically reduced by the year 2000. Gender parity has been observed in a number of countries in southern Africa, such as Botswana Lesotho, South Africa and Zambia (ICAE, 2003). A report by the International Council of Adult Education (ICAE) indicates that to retain a gender balance, there is need for literacy programmes to address the specific needs of women and to enhance their participation in literacy. Also, programmes should recognize their cultural specificity and creativity, and acknowledge their experiences in the planning and execution of literacy education. Countries need to develop responsive content, use participatory methodologies, and

adjust timetables and other resources and logistics to respond to the peculiar circumstances of their stakeholders (ICAE, 2003). Even among the countries listed above, there still is a need to address these aspects to increase the enrolment and retention of women and girls in literacy and basic education programmes.

According to the 2005 Global Monitoring Report, worldwide the enrolment of girls in primary schools improved in the 1990s. The gross enrolment ratio (GER) for girls increased by more than 3 per cent, from 93.1 per cent in 1990 to 96.5 per cent in 1999, while over the same period the GER for boys fell from 105.5 per cent to 104 per cent (UNESCO, 2004). The gender parity index improved in all regions and in nearly two-thirds of the 92 countries for which data was available. Asia, the Arab world and Africa face the greatest challenges in terms of meeting the Dakar goals by 2015. The report argues that the provision of education in Africa should, of necessity, be made an obligation of governments, and that it should be mandatory that African leaders translate their international commitments into national legislative instruments against which citizens could have legal recourse in case of gender violations or whatever might predispose them to violation.

In Botswana, there are clear variations with respect to the representation of both boys and girls at the different levels of the education system. For example, enrolment data for 2005 indicates that more boys than girls enrol in lower classes. Whereas the system is able to retain girls at the primary school level, the opposite is true at secondary and tertiary levels. In the process, this trend upsets the gains attained at primary school level in terms of gender equity. In spite of commendable efforts to attain gender parity, the number of boys in the upper primary school classes declines as the pupils' progress with their education.

There are more boys dropping out of the primary school system in Botswana than girls. In 2003, 62 per cent of the pupils who dropped out at primary school level were boys. One of the reasons used to account for this phenomenon is the practice of child labour taking place in some cattle posts and farms. In terms of repetition, there were more boys (63 per cent) in Botswana who repeated a class than girls. Girls seem to be making more progress than boys in terms of completion rates at primary school level.

There is still, nonetheless, a need to undertake detailed investigations to determine the factors that have influenced this trend.

The secondary school level saw a different trend in terms of the drop-out rates. At this level, there are more female students dropping out of school than boys. In 2005, 63.1 per cent of the students who dropped out at secondary school level were girls. Pregnancy remains the main contributory factor. The high drop-out rate for girls at the secondary school level reflects a reversal of the gains made at the primary school level. The government has put in place a policy that allows girls to re-enter the school system after giving birth, though they are expected to go to a different school.

In Botswana, there are clear variations in terms of the educational performance of boys and girls. Girls tend to outnumber and outperform boys in primary school leaving examinations. According to the Ministry of Education (2006), "a total of 42,532 candidates sat for the 2006 Primary School Leaving Examinations (PSLE). Of this number, 21,822 were females while 20,710 were males" (p. 2). The report further states that, "as in previous years girls performed better than boys across the five subjects (Setswana, English, Mathematics, Science and Social Studies). They obtained an overall pass of 84.8% at Grades A-C compared to 74.2% for the boys... 13.3% of the girls were awarded overall Grade A compared to 9.7% for the boys" (p. 13). For the first time in the history of the University of Botswana, more than 50 per cent of the cohort that graduated in 2006 was female.

III-7. The HIV/AIDS challenge

One of the UN Millennium Development Goals (6) focuses on the need to halt and reverse the spread of HIV/AIDS. The 2007 Millennium Development Goals Report notes that although the prevalence of HIV/AIDS has levelled off in general, the opposite trend persists in Sub-Saharan Africa, where deaths from AIDS continue to rise. "By the end of 2006, an estimated 39.5 million people worldwide were living with HIV (up from 32.9 million in 2001), mostly in sub-Saharan Africa" (United Nations, 2007:18).

The educational sector serves as one of the strategic points of intervention. It is strategically positioned in many respects. First, it can serve as a vehicle for enlightening people about the pandemic. In addition, the future generation of leaders are mostly found in the schools, and any hope of an AIDS-free generation depends very much on the ability to empower these children. Countries in Sub-Saharan Africa have realized the need to introduce some changes in the education sector in response to the challenge of the HIV/AIDS pandemic.

The direct impact of HIV/AIDS on the school drop-out rate has not been confirmed, but some girls are said to be dropping out at the secondary school level due to this problem. Increased drop-out rates by girls at the secondary school level result in gender disparities that do not favour females at the secondary school and, subsequently, tertiary levels.

Females are generally expected to undertake some household chores, such as taking care of family members. As a result of the HIV/AIDS problem, some girls end up missing the opportunity of staying on at school. The challenge of the HIV/AIDS pandemic, in relation to the education of girls, was aptly stated by the former Secretary General of the United Nations, Kofi Annan (2004):

"As AIDS forces girls to drop out of school — whether they are forced to take care of a sick relative, run the household, or help support the family — they fall deeper into poverty. Their own children in turn are less likely to attend school — and more likely to become infected. Thus, society pays many times over the deadly price of the impact on women of AIDS."

The challenge of HIV/AIDS threatens to reverse the gains that countries have realized in the education of girls. This is clearly summed up by the UNAIDS report of 2004, which notes that:

"Southern Africa has been a regional leader in achieving girls' enrolment in school, with rates as high as — and sometimes higher than — those for boys. Now the challenge is to keep them there. Though more hard data is still needed, anecdotal evidence suggests that girls are being pulled out of school in growing numbers — to care for the sick, when they are orphaned, or as a result of the economic impact of HIV/AIDS on their families." (p. 10)

The HIV/AIDS problem has the potential to disrupt the provision of education. The difficulty of gauging its direct effects emanates from the fact that HIV/AIDS carries a lot of stigma and, hence, deaths and other problems related to it are often concealed. It has been suggested that:

“The high level of prevalence of HIV/AIDS in a growing number of developing countries, especially sub-Saharan Africa, is a major factor influencing teacher absenteeism and lack of effectiveness, sometimes leading to high teaching-staff attrition rates.” (EFA Global Monitoring Report, 2005:112)

The impact of HIV/AIDS is also likely to manifest itself in the following ways:

- Impact on demand: HIV/AIDS affects a growing number of children. The groups most strongly affected are HIV/AIDS orphans and other vulnerable children, as well as girls (who are more often infected by the virus than boys).
- Impact on provision: The impact of HIV/AIDS on teachers is reflected in a rising mortality rate and lower productivity due to absenteeism.
- Impact on quality: Quality is suffering as a result of the deterioration of educational provision and of education systems, the psychological conditions faced by both teachers and students, and declining capacity for planning and management. (ADEA Newsletter, April-September, 2003:14)

The president of Zambia is quoted as having stated in 2004 that over 40 per cent of teachers in Zambia were HIV positive (UNESCO, 2005). This is a clear illustration of the magnitude of the problem that the education sector has to contend with. It is a huge challenge for Sub-Saharan African countries, especially given that the number of teachers is insufficient to cope with the number of children entering the system.

In view of the challenges such as the ones already cited, it has been suggested that “systems must be developed for keeping the increasing number of orphans in schools, and solutions found for their long-term care and development” (UNESCO, 2000:24). This is the challenge and agenda that should be pursued in earnest.

III-8. Innovative approaches for tackling HIV/AIDS in Sub-Saharan Africa

The importance of the education sector in combating the HIV/AIDS problem is aptly captured by Rosen (2001:6-7), who states that:

[We] “should not lose sight of the fact that Education for All is a major policy to reduce the spread of HIV/AIDS. There is a well-established positive correlation between educational attainment and safer sexual behaviour, which will translate into lower rates of new infection. Further, schools are an important point for providing information on HIV prevention.”

Having enumerated some of the problems that arise due to the HIV/AIDS pandemic, the sections that follow showcase some of the interventions that have been implemented in selected countries in an attempt to halt the spread and impact of the HIV/AIDS pandemic. As the presentation will reveal, there is a need to adopt diverse strategies in dealing with this problem. Overall, the general approach to address the implications of HIV/AIDS to EFA and the MDGs has been to restructure traditional educational delivery systems; this happens amid concerns that “it is difficult to discern from research how the education vaccine works” (Hepburn, 2001:9).

III-9. Health sector interventions

The health sector is an obvious focus area for dealing with any disease. This sector needs to have effective response strategies that will enable it to support other sectors. Outside the school system, a major policy decision taken within the health sector that has assisted in cushioning the impact of the HIV/AIDS pandemic in Botswana is the provision of free Anti-Retroviral Therapy to all citizens. This has assisted in curtailing the problem of teacher absenteeism and teacher mortality associated with the AIDS problem. Tackling teacher absenteeism and mortality is a crucial strategy in the quest to attain quality in education; there is a need to ensure that qualified teachers are retained. The provision of free Anti-Retroviral Therapy has helped Botswana to preserve its teaching force.

In 2002, Bennell, Hyde and Swainson (2002) projected that by 2010 the mortality rates amongst teachers in Botswana would rise by 5.6 per cent for primary school teachers and by 7.6 per cent for secondary school teachers. Yet in their report, Bennell and Molwane (2007), reveal that, contrary to what was projected, mortality rates have declined significantly. The mortality rate amongst teachers at both the primary and secondary schools levels, arising from all causes, is now only 0.18 per cent. The huge financial investment that Botswana has put in the provision of Anti-Retroviral Therapy has assisted in saving lives and sustaining the critical workforce needed to support the economy. The Government of Botswana's expenditure on HIV/AIDS is very high, standing at P1.14 billion, or 7 per cent of the total government expenditure in 2005 (Bank of Botswana, 2006).

Nonetheless, the education system has experienced some setbacks as a result of the decision to invest huge funds in fighting HIV/AIDS. The 7 per cent of its total expenditure that the Government of Botswana has spent on the fight against the HIV/AIDS pandemic could have been devoted to building more senior secondary schools. Consequently, access to senior secondary school could not be increased. The experience of Botswana can provide a good lesson for other countries in Sub-Saharan Africa where the teaching population continues to be decimated by AIDS. It is equally true that not many countries in Sub-Saharan Africa can afford to provide free Anti-Retroviral Therapy to their citizens. As a result, there is a need to pursue other options.

III-10. Curriculum reforms

The Ministry of Education in Botswana has, over the years, come up with several interventions geared towards fighting this problem. One such innovation was the formulation of a policy on HIV/AIDS education in 1998 (Ministry of Education, 1998). A major thrust of the policy was infusion/integration of HIV/AIDS education into the curriculum. This has been made mandatory for all education levels, primary to tertiary. The infusion of issues dealing with sexual reproductive health into the curriculum represents a major innovation in the education system, given that the discussion of such issues has always been a taboo in African culture. The policy also

prescribed the incorporation of guidance and counselling into the teacher training programmes. The policy further discouraged discrimination against those children and teachers infected or affected by the disease; they are to be allowed to stay in the school regardless of their status.

The curriculum reforms also ushered in the introduction of an HIV/AIDS awareness campaign at the primary school level. The campaign continues in lower secondary schools, where pupils are in their early teens. However, awareness about human sexuality and reproduction, with an emphasis on birth control and reducing teenage pregnancy, has always been part of the wider intervention programme to retain females for longer in the education system.

Another significant curriculum reform in Botswana has been the shift in emphasis from religious education to moral education. This reform came about as part of the realization that in order to influence behavioural change, moral education was more relevant than the study of different religions.

Some countries already have realized the need to develop a relevant curriculum, one geared towards enabling the recipients to function effectively in their societies. This is exemplified by countries such as Lesotho, South Africa and Zambia, where a life skills curriculum and learning and teaching materials have been developed to enable learners to deal with the HIV/AIDS challenge. It has been suggested that the curricula developed in Zambia and South Africa "generally aim at equipping learners with skills such as decision-making, problem-solving, effective communication, assertiveness, and conflict resolution" (Coombe, 2002:15). In these countries, the imparting of life skills has been made a priority in the curriculum.

The major challenge now lies in the extent to which teachers are adequately prepared to handle the life skills curriculum. There is a need for teacher training institutions to assist teachers to develop the skills and competencies to teach such a curriculum. The provision of life skills training for teachers should become a policy priority guiding teacher education.

III-11. Providing support to orphans

Apart from the emotional stress that may impede their success at school, orphans' participation in education may be halted by educational costs such as school fees, uniform costs, transport costs and any other levies that a school may have in place. Given that the orphans may be left with care-givers who lack the economic means to care for them, there is an urgent need for governments to develop strategies that will provide the necessary support for these children to continue with their education.

In Botswana, orphaned children are provided with food every month by the government. In addition, the government pays for their uniform as well as transport to and from school. This is an expensive venture, but equally important in ensuring that the orphans do not miss out on the opportunity to go to school.

III-12. Community participation

Beyond the school exists the community that the learners come from and return to after school. The community has been identified as a major player in education, including in the fight against the HIV/AIDS pandemic. According to Rosen (2001) community schooling is:

“popular in many Aids-affected areas, including Malawi, Mali, Uganda, and Zambia. Community schools are low-cost, use local leaders as teachers (often as volunteers), and do not charge tuition. Community schools are less expensive per pupil than government schools, but they depend on in-kind community contributions. Research suggests that community schools increase access and have the flexibility to accommodate non-traditional students... Potential drawbacks of community schooling include: low quality of education due to poorly trained teachers and lack of curriculum oversight; the isolation of children based on their orphan status; increased dependence on donor inputs; and the relatively high demand it places on community resources.” (p. 9)

Although the efficacy of community participation in education is still to be evaluated further, it is nonetheless one of the ways of promoting a link between the school and society. It provides a collective approach towards addressing issues such as HIV/AIDS, taking into

consideration the local context from which the learners come.

III-13. Exploitation of information communication technologies

Africa still lags behind in terms of the availability of a well-developed information communication technology (ICT) infrastructure. Nonetheless, efforts are being made by some countries to harness the available resources to address local needs. One of the creative means of reaching out to people is the use of the media. For example, Zambia has adopted radio education that embraces the use of “Interactive Radio Learning Centres for out-of-school youth in Zambia” (Rosen, 2001:13–14).

The Ministry of Education in Botswana has an interactive television programme dubbed “Talk Back”. The Talk Back programme is part of the Teacher Capacity Building Programme (TCB), an initiative that involves the African Comprehensive HIV/AIDS Partnerships (ACHAP), the Ministry of Education, Botswana Television (BTV) and the United Nations Development Programme. The programme has been described as follows:

“The TCB project is an interactive teacher education programme which targets Botswana’s teachers with information about HIV/AIDS in an effort to build their capacity to effectively address HIV/AIDS issues in the classroom. The direct beneficiaries of TCB are 21,782 teachers in schools including tertiary institutions of education. Indirectly, TCB potentially reaches 469,938 students in 974 educational institutions. Each of these institutions has been equipped with a television set, video cassette recorder, satellite dish and decoder. Started in 2003, a weekly live television education programme (Talk Back) has been implemented through BTV. In their respective schools, teachers view the recorded live programmes and discuss the programme content with a view to share experiences that enhance individuals’ teaching on HIV/AIDS. TCB is aimed at advancing the school system’s capacity to reduce stigma and break the silence surrounding HIV/AIDS.” (http://www.achap.org/programmes/central.html)

One of the innovative aspects of this programme is the use of sign language in addition to the usual modes

of communication. This is a vital development, as the programme is made accessible in this manner to the deaf. This is a clear testimony of the implementation of inclusive education: the deaf also are affected by HIV/AIDS and, hence, they need access to information on this pandemic. The deaf are one of the vulnerable groups that are prone to being marginalized in the provision of education. Consequently, the mode of delivery that has been adopted in the presentation of the Talk Back programme reflects a positive step towards addressing this problem, and it is an effort that is worth celebrating.

III-14. School feeding programmes

As has already been indicated, poverty is one of the challenges that Sub-Saharan Africa has to contend with. Some children are not able to get a meal before they go to school. As a result, such children attend school on an empty stomach, a factor that is bound to affect their performance at school. School feeding programmes have been introduced in several countries to deal with this problem.

Through the assistance of Japan and the United Nations, Angola was able to introduce a school feeding programme at primary schools in 2005. This project has been implemented in primary schools in the provinces of Huambo and Kuanza Sul in the Republic of Angola, areas that were severely affected by civil war and which are characterized by high levels of poverty. It is hoped that this scheme help to improve school attendance rates (<http://www.mofa.go.jp/announce/announce/2005/5/0518.html>). Japan has also been supporting a school feeding programme in Côte d'Ivoire targeting primary school children in rural areas (<http://www.reliefweb.int/rw/rwb.nsf/AllDocsByUNID/dd76f2e2bb01bdc485256dd3006f7366>).

The Ghana School Feeding Programme (GSFP), which targets reaching 1,500,000 students by 2010, was introduced in 2006; it seeks to provide hot meals for pre-primary and primary school children. One of the unique features of the GSFP is that the food is sourced from within Ghana; thus, the project supports the local economy while at the same time addressing a need within the educational sector. The programme was reported in

one of the local papers, *The Statesman* (20 October 2006), to have performed beyond expectation in 2006, the same year it was introduced. Part of the success was attributable to the involvement of local farmers, local business people, parents and community leaders.

School feeding programmes also have served a wider function in Botswana. Primary schools in Botswana have always offered continuity in basic social welfare programmes in which pre-school children, as part of measures to reduce poverty and improve national nutrition levels, get food rations and related food supplements from clinics/health posts. Beyond the age of 6 years, children enrol in primary schools that now constitute part of an extensive and elaborate network of social welfare centres. The added benefit of enrolling in schools is that of identifying children from under-privileged families who continue to get due assistance and privileges from the government through their respective local authorities. In this case, primary schools in Botswana are part of the government's multi-pronged social welfare intervention strategy for poverty alleviation, ensuring that most under-privileged children get the necessary education and material assistance from government. The government provides tuition-free education and stationery to all children. In remote rural areas with low population densities, the government provides boarding facilities to school-age children so that a primary school in the locality can be functional and sustainable.

III-15. Provision of basic literacy in Sub-Saharan Africa

The provision of basic literacy in Africa is primarily viewed as a public good. It is seen by nation-states as an aspect of a strategy that could enable them to propel development. The following sections look at what has been done in the provision of literacy in Africa.

Literacy is a dynamic concept that defies simple definitional categorization. At times, it is understood as entailing just reading, writing and basic numeracy. Some have enlarged the concept to include a whole range of "more complex and diverse skills and understandings" (Lonsdale & McCurry, 2004:50). For example, the recent *Global Monitoring Report* (2006) defines literacy as a

“contextually bound continuum of reading, writing and numeracy skills developed through the process of learning and application, in school and in other settings appropriate to youth and adults” (UNESCO, 2006:30). As such, it is seen as an autonomous skill and an indispensable component of social and economic development in society. Alternatively it can be viewed as applied, practiced and utilized according to the social and cultural context in which it is organized (Gee, 1996; Street, 1995). In the former approach, literacy is seen as a neutral skill necessary for the survival of its recipients. When viewed as a practice (Street, 1995), literacy focuses on the social context of the learners, the different uses they make of literacy, and the meanings they attach to it.

III-16. Challenges for literacy provision in Sub-Saharan Africa

While the provision of literacy is a right and an entitlement of all citizens, there are nagging problems that need to be addressed before the right to literacy can be enjoyed by the majority of the Africans. First, there is a lack of information and resources. In addition, literacy tends to be a peripheral part of educational policy; it is over-looked, under-funded and given a very low priority. These factors have a negative impact on the quality of delivery. There is a need for investment to be spread reasonably between the schools and non-formal education programmes, projects and campaigns.

III-17. Exemplary practices of literacy delivery in Africa

Next, we assess exemplary practices that could be adopted and selectively applied across contexts, highlighting efforts in different African countries to improve the quality of literacy delivery. These include ensuring efforts to support literacy, establishing and nurturing good relationships with non-governmental organizations, training of teachers and decentralizing of literacy education.

III-18. Ensuring support for literacy

Given that Africa has a problem of lack of resources, there is need for a comprehensive policy on the shared use of resources. There also is a need to fine tune policies in

order to ensure that literacy is not overlooked. In Rwanda, there is a separate policy for basic education and literacy; this makes it difficult for literacy to be overlooked in budgetary allocations. Others countries, such as Botswana, have incorporated literacy into the broader educational policy, which makes it less of a priority. Some African nations, such as Kenya, have demonstrated a commitment to succeed by ensuring that literacy policy is given increased political attention. It is part of strategic planning and monitoring, and it is given adequate funding.

Literacy delivery in Africa can be improved. In Senegal, the use of public–private partnerships to deliver literacy has had an impact on literacy rates, and the state has increased the share of the education budget allocated to literacy as a sign of its commitment to attain the EFA goals (Maruatona, 2005). Some countries, such as Burkina Faso, Botswana, Kenya, Namibia, South Africa, Senegal and Uganda, are making efforts to link literacy to other national development strategies and education.

III-19. Literacy campaigns

Apart from policy formulations, some governments have embarked upon practical steps geared towards delivering a literacy programme. In their efforts to meet EFA goals, nations have organized campaigns, programmes or projects. A literacy campaign is a massive effort that seeks to involve all sections of society in the efforts to provide reading, writing and numeracy skills to illiterate men, women and youth. It is provided within a set period of time, and it is expected to lead to changes in the economic, social, cultural and political status of service recipients.

Some African nations, such as Ethiopia, Guinea Bissau, Mozambique and Tanzania, chose the “socialist” route to development and have resorted to the use of campaigns to address illiteracy or to provide literacy opportunities to their citizens who had missed schooling during the period of colonialism. Lately, campaigns have assisted nations to address the EFA goals. The campaigns in Algeria, Ethiopia, Mozambique, Somalia and Tanzania helped the leadership to raise the conscientiousness of the people, and helped in the struggle for independence and during the transition to nationhood after independence. For example, Mozambique organized four campaigns from 1978–1982; but while in

the first two some 500,000 people participated, there were far fewer in the last two campaigns (Lind, 1988; cited in UNESCO, 2006).

Campaigns assist nations to provide education for all across various sections of their population. South Africa recently launched a literacy campaign aimed at reducing illiteracy by 2012 among the 4.7 million illiterates who were denied access to education and training under apartheid. The campaign addresses the critical challenge of achieving the goals of Education for All (Republic of South Africa, 2007).

III-20. Literacy programmes

A programme is a nationwide, large-scale literacy provision effort mounted by a state to address the problem of illiteracy. The programme is viewed as part of a human right, and also seeks to enable recipients to acquire economic and other life skills. The state uses it to make its presence felt and to promote its presence and legitimacy in the population (Lind and Johnston, 1990). In most countries, programmes that have recorded impressive increases in literacy have been built in as part of a broader national planning framework and articulated in National Development and District Development Plans or decrees. Both primary education and adult learning in these cases are almost exclusively planned and sponsored by governments and treated as part of the national development effort (Youngman, 2002).

The provision of large-scale adult literacy programmes in Botswana, Burkina Faso, Kenya and Zimbabwe sought to gradually provide literacy as part of national development plans and human rights initiatives. People engage in learning with the hope of finding employment, getting a promotion or changing careers (Lind and Johnston, 1990). This has been an essential tool in national efforts to meet the goals of Education for All, as stipulated in the Jomtien Declaration and revised at the World Education Forum held in Dakar, Senegal, in 2000.

III-21. Literacy projects

Bhola (1995) argues that projects tend to be small scale and less bureaucratic, with more capacity to respond adequately

and with stratified and clearly defined objectives restricted to a small group of people. In Mali, the use of projects enabled the state to improve literacy in Bambara, Mande, Peul, Sonhay and Tamasheq. In Burundi, Niger and Togo, literacy materials were prepared in local languages.

In a given context, projects primarily depend upon the needs and motivation of the people served. Projects tend to display essential flexibility in providing literacy opportunities to those who need them within a short time. They have enabled the above-mentioned nations to address their EFA goals. All these approaches, therefore, have played a pivotal role in helping nations to study their contexts and use their resources to provide literacy to all sections of their society. This goal has mostly been achieved through working with NGOs.

III-22. Cordial working relationships with non-governmental organizations

Since the Fifth International Conference on Adult Education (CONFINTEA V) in 1997, there has been a concerted effort by non-governmental organizations (NGOs) and civil society to collaborate with willing governments in the delivery of education. Data reveals that, in some cases, NGOs play a more prominent role than the governments of the countries that they operate in. A key strategy identified at Dakar as critical to achieving EFA is the continued engagement of civil society and NGOs in the formulation, implementation and monitoring of national literacy strategies.

There is some evidence that various countries have accepted the role of NGOs in educational policy formulation and the preparation of national EFA plans (UNESCO, 2000). Two regional literacy organizations —PAMOJA (a Kiswahili word that means “Together for Rights”) and Project Literacy (PROLIT) — played major roles in helping to further the goal of literacy education in Africa. Countries such as Kenya, Nigeria, Rwanda, Senegal, South Africa and Zambia depend heavily on NGOs. In Kenya, ACTIONAID, Plan International, Literacy and Evangelism, Bible Translation and Literacy, Kenya Adult Education Association and Kenya Adult Learners Association made significant contributions over the years to promoting adult literacy. In Senegal, literacy

provision is based on the wider support of all sections of society for the eradication of illiteracy. These programmes are implemented with the active participation of both governments and NGOs working in the communities.

III-23. Literacy teachers' training and support

All policies in Africa, especially the New Partnership for Africa's Development (NEPAD), point to the centrality of well-trained teachers in the delivery of literacy. The relative success exhibited by different programmes depends on the quality of the instructors and the effectiveness of their training. Many facilitators are local people or volunteers with no formal qualifications; others are full-time or part-time representatives of NGOs or development workers. Full-time teachers from other sectors of education also teach adults on a part-time basis (such as in Tanzania), and full-time qualified adult educators are employed within the programme of basic education and training (UNESCO-BREDA, 2005).

However, the majority of teachers in Africa are underqualified, which impacts negatively on their teaching. Although they may be motivated and dedicated, they often lack the requisite skills to teach. In such countries as Botswana, Namibia, Rwanda, Tanzania and Zambia, instructors are trained to teach literacy after being exposed to the principles of teaching adult learners. In Botswana and Ghana, teachers are recruited from different ethnic and language communities before being trained (Maruatona, 2001). In the Ghanaian National Functional Literacy Program, teachers are recruited from among local communities and, after completing a literacy batch, are given a bicycle or sewing machine as public recognition of their contribution (Lauglo, 2001). The teachers are volunteers, and are given a small honorarium per session taught.

Teacher training in Africa is primarily the responsibility of government ministries, departments or directorates responsible for adult basic, literacy and non-formal education. The trainees are posted to both governmental and NGOs providers (Ellis, 2002, Torres, 2003). The only exceptions were found in Namibia and Zimbabwe. In Zimbabwe, NGOs such as the Adult Literacy Association of Zimbabwe (ALoz) and the Zimbabwe Adult Learners'

Association (ZALA) are responsible for the training of instructors (Mudariki, 2002). In Namibia, after being trained, the trainees sign an annual contract with the Directorate of Adult Basic Education, of the Ministry of Basic Education, Sports and Culture. This gives instructors the opportunity to test their interest and enables their supervisors to test their commitment (Ellis, 2002). It has been noted that in all these cases, teachers are provided with refresher courses to ensure that their teaching skills are sharpened every year, and to enable them to share the successes and challenges in their work.

The challenge for literacy teachers remains that they need to be hired on a relatively permanent basis. Instances where literacy programmes depend on the use of volunteers have been shown not to be sustainable. It is, therefore, strongly recommended that countries emulate the Namibian model in which teachers are hired on a contract basis. This would enhance continuity and ensure the sustainability of the literacy programmes, projects or campaigns.

III-24. Language and cultural diversity issues

The importance of employing indigenous African languages in the education system has been highlighted by African leaders. They did so through the adoption of The Language Plan for Action for Africa in 1986 (Organisation of African Unity (OAU), 1986). This plan of action encourages the countries to use African languages for instruction purposes in schools. This commitment was reaffirmed through the Harare Declaration, which was adopted by ministers at the Intergovernmental Conference of Ministers on Language Policy in Africa, held in Harare, Zimbabwe, in 1997, organized by UNESCO in conjunction with the OAU. The Harare declaration emphasized the need to implement the already agreed-upon language plan of action. There is, therefore, a need for African governments to reform their education systems in order to ensure the realization of the ideals to which they have committed themselves.

The use of African languages in education also has been supported by such charters/declarations as the charter of OAU (1963), the OAU cultural charter of Africa (1976), the OAU Lagos plan of action (1980) and the Accra declaration

of 1996. Despite the rhetoric and declarations/charters, however, the dominance of European languages persists. It also is worth noting that in some parts of Africa (especially Anglophone Africa), efforts to encourage the use of mother tongue education (MTE) started during the colonial era. For example, the Phelps-Stokes Commission of the 1920s recommended the use of MTE for the first 3–4 years of primary education (Jones, 1925).

III-25. African languages and quality education

The debate on the subject of good quality education brings to the fore consideration of the likely impact of the utilization of African languages as media of instruction in the education system. This has become a topical issue that African leaders are struggling to resolve. The most critical challenge is the perpetual domination of European languages in the education systems of Sub-Saharan countries. African languages often are considered to be insufficiently developed, such that they cannot be adequately employed to teach scientific and technological concepts. Consequently, if they were to be employed in the education system, this would affect the children's ability to grasp such concepts and would negatively impact the quality of education. It is equally thought that the use of such languages would hamper the learner's ability to master a second language. As such, the languages of former colonial rulers continue to be the official languages. This, again, is judged to be counterproductive when it comes to the pursuit of good quality education. Africa south of the Sahara thus continues to struggle in terms of embarking upon the utilization African languages in the education system.

The continued dominance of European languages in the global world continues to be a major factor inhibiting the full integration of African languages into their education systems. The use of African languages is, at best, restricted to the lower levels of primary education. Malawi, for example, uses Chichewa as a medium of instruction from standard one to standard four. Botswana, on the other hand, uses Setswana, the national language, at standard one only. For both countries, the dominant language of instruction is English. In Namibia, the national languages are utilized as the medium of instruction for the first three grades at primary school level (*New Era*, 24 September

2007). Thereafter, English takes over as the language of instruction from the fourth year, and the local languages are addressed as school subjects. Two countries, Tanzania and Somalia, have adopted a single language or national language as the medium of instruction throughout the primary school cycle. Tanzania uses Kiswahili whilst Somalia uses Somali. Some countries, such as Niger, Mali, Burkina Faso and Burundi, utilize the national language for the first four years of primary education, then revert to the language of their former colonial rulers.

The clamour for European languages will not be easy to deal with. Any educational reform that does not serve to protect or promote the interests of the elites is unlikely to receive their support. Unfortunately, it is these very same elites who are the policy makers and power brokers in most African countries — not the ordinary citizens, who may not be even aware of the contestations that are taking place. The hypocrisy of the policy makers is that they do not practice what they preach about MTE. Opinion leaders also are not always helping matters. A local chief in Ghana was quoted in the local press (Ghana News Agency, 13 November 2006) as having proclaimed that the language policy should be reviewed with a view towards stopping the use of local languages in public schools. He wanted children to be introduced to English at an earlier stage, as is the case with private schools.

The issue of the acceptance of African languages as media of instruction is not entirely confined to pedagogical considerations; it also is heavily influenced by the perceptions of parents and politicians. There is an ingrained attitude amongst some people that proficiency in European languages is a significant marker of educational success. Such a view is not far fetched, given the dominance of such languages in various social and economic domains. There is, therefore, a very narrow view of education as being the ability to function fully in the European languages. This view continues to denigrate African languages, whilst on the other hand European languages are highly valued. For educational reforms to effectively take place, there therefore is a need for reform in the wider social and economic context wherein these competing languages operate.

The continued perpetuation of the negative perception of the role of African languages in education has meant that Africa has lost opportunities that could have led to the empowerment of its people. The absence of textbooks in such languages has, for example, been used to justify why African languages cannot be used in the school system. No consideration has been given to the fact that the production of materials in such languages will not only advance scholarship, but also result in job creation and subsequently assist in poverty reduction in Africa. This is the potential of the language industry; English Language Teaching (ELT) is an industry that creates millions of jobs directly and indirectly every year.

The fact that African countries are reluctant to exploit the use of African languages as media of instruction at primary school level does not derive from an absence of evidence that attests to the efficacy of doing so. There are exemplary experiences within Sub-Saharan Africa that offer good lessons on what can be accomplished through the utilization of African languages in the education system. A project undertaken in Nigeria, where Yoruba was used for 6 years at primary school level, showed very positive results. (Heugh, 2005). Heugh also cites Somalia as the only African country that has been able to use an African language throughout the entire education system. The success of the Somalian endeavour is attributed to political will on the part of the then-government. Tanzania's Swahilization programme was initially meant to run from pre-school up to the tertiary level. Along the way, however, Tanzania withdrew from the Swahilization programme due to the economic restructuring the country was required to undergo. One condition attached to the UK's donor assistance to Tanzania was the use of English in education; as part of its aid package to Tanzania, the UK brought English-language teaching materials and teachers. Consequently, this donor-dependent country failed to pursue its language planning agenda.

Language remains a crucial element in terms of human capital. Competence in some languages, particularly European languages, continues to be an essential asset for Africans. In the process, whereas the social value of African languages continues to be appreciated, the same cannot be said about their economic value. It also is the case that, often, governments have not seen investment

in the promotion of African languages as a priority. There are, nonetheless, some commendable steps that African countries have embarked upon in this area, including policy directives providing for the use of African languages; constitutional provisions (South Africa and Namibia have constitutional provisions for the languages spoken in their countries); development of orthography for the different languages; and the teaching of African languages as school subjects. These are indicators that Sub-Saharan countries are paying attention to the need to utilize local languages in the education system.

III-26. Vocational and technical education in Botswana and Africa

The quest for educational relevance brings into the picture the subject of the impartation of skills that people can use to earn a living. The increase in poverty and unemployment has partly been attributable to a shift from subsistence farming, which used to absorb most of the labour force, to an industrial- and technology-driven economy. The new economic order requires creative, skilled and qualified personnel. The informal sector of the new economy is characterized by self-employment, and small-scale investment is currently under-developed and unexploited by school-leavers in most Sub-Saharan countries. This brings into focus the need to develop vocational education.

Before the 1990s, many Sub-Saharan African countries paid little attention to technical and vocational education (TVE); concentration was largely on basic primary education. This attitude towards TVE, however, changed in the 1990s due to the restructuring of the world economy starting in the 1980s that basically favours technical knowledge as the driver of economic development. The global economic recession of the 1970s and 1980s led to unprecedented levels of unemployment — particularly youth unemployment — demanding that education be restructured so as not only to educate and train for self-employment, but for unemployment as well. Vocationalization of the curriculum was seen as one way of achieving both self-employment and improved productivity at the workplace.

While lately there has been much attention given to technical and vocational education, there have been differences in approaches to TVE. The first approach could be described as the prevocational awareness training embedded in the curricula and subjects of general education. The second has been occupationally directed to basic training in vocational schools or institutes, an approach that has tended to run in parallel with the general education system. We will look at each of these approached in turn.

III-27. Pre-vocational and pre-technical preparation

In almost all countries — and as a result of a realization of the importance of technical and vocational education — academic general education in its “pure” form has, by and large, disappeared. Although all education systems have always offered technical and vocational education of sorts, the latter was, for most part, an insignificant and despised “appendage” to academic general education.

In the 1990s, many African countries reviewed their education systems in an attempt to integrate TVE with general education, an approach that is termed pre-vocational/pre-technical preparation. This approach does not aim to offer job-specific training to students, but seeks merely to raise their awareness of the world of work; it aims to help students make informed vocational choices once they exit the general education system. The strategy involves (1) giving existing academic subjects of the general education system a vocational orientation and (2) introducing technical and vocational subjects in the general education curriculum.

One country that has adopted this strategy is Botswana, where the Revised National Policy on Education (RNPE) of 1994 identified the education–training dichotomy as a major hindrance to attuning education to the world of work. It directed that general education be reformed by way of giving existing subjects some vocational orientation. This involved an extensive review of all subject syllabuses with the aim of producing skills-based syllabuses. Each subject was to justify its inclusion in the curriculum by demonstrating cogently that it was capable of imparting skills that would help prepare the learner for the world of

work. The curriculum was to have a “practical orientation which [would] allow students to have hands-on experience and the opportunity of applying knowledge and skills to real life situations” (Republic of Botswana, 1999:3). However, there was no intention to offer job-specific training within general education.

The second approach to pre-vocational preparation was the introduction of technical and vocational education subjects, such as home management, business studies, fashion and fabrics, computer studies, food and nutrition, art and design, and technology. In this way, the curriculum was broadened; all students were to do at least one technical and vocational subject during their stay in the education system.

In addition to giving existing subjects a vocational orientation and introducing new technical and vocational subjects in the general education curriculum, a separate TVE system that parallels the general education system was to be expanded and upgraded to allow as many students as possible to join it at the end of either 10 years of basic education or 12 years of general education. To this end, a huge infrastructure of technical and vocational colleges has been (is being) developed. In addition to these developments, “brigades” have been improved to enhance their effectiveness and efficiency.

In very general terms, these developments in Botswana reflect general developments in the area of technical and vocational education in sub-Saharan Africa in general. In Cote-d’Ivoire, for example, TVE is integrated into secondary school and higher education as well as vocational training outside of the school system. The situation in Ghana is markedly similar to that of Botswana. In Kenya, students can specialize in one TVE subject in their final (4th) year of secondary education. A study by Atchoarena and Delluc (2002) shows that in almost all sub-Saharan African countries, girls are under-represented in the TVE system, with only Botswana fairing much better.

Many countries in Africa have always had traditional apprenticeships in the informal sector. In times of economic doldrums, the informal sector has proved very effective in ameliorating unemployment. Realizing this, countries such as Kenya, Ghana, Nigeria and Zimbabwe

have decided to develop traditional apprenticeships programmes, primarily for artisan training. These have tended to be cost-effective, flexible and very adaptable. The case of the Traditional Apprenticeship Programme (TAP) in Zimbabwe has been hailed as a “success’ story”. Organized under the auspices of the Informal Sector Training and Resources Network (ISTARN) projects, TAP aims to improve the effectiveness of traditional apprenticeship programmes by providing (1) short pre-apprenticeship training, (2) a short follow-up training series and (3) access to various post-training support services (Johanson and Adams, 2004). The programme’s most innovative aspect is block training, which alternates between work and periods of training. Tracer studies have shown that graduates of the programme are more successful at finding employment in the informal sector. Taking advantage of available infrastructure, the programme uses underutilized infrastructure at technical training colleges over holidays and weekends. In this way, the efficiency of the infrastructure is improved. The major advantage of the programme is that the “total cost of creating a job in the informal sector, from training through self-employment, is only a tenth of the estimated cost of training alone for a formal sector job” (Johanson and Adams, 2004:219).

III-28. Challenges to the delivery of TVE

TVE has faced a number of challenges in Africa. One of these has to do with organizational and management patterns. There has been a tendency for TVE programmes to be housed in different ministries and departments, making coordination of the activities of the various institutions very difficult. This is a problem in many countries. This fragmentation leads to duplication of effort and general internal and external inefficiencies. Many countries have taken stock of this and have responded by creating regulatory bodies that oversee and regulate the activities of service providers. This has happened in Botswana, Mauritius, South Africa, Zimbabwe and many other countries. In Botswana, for example, the Botswana Training Authority (BOTA) was created to coordinate the skills training system. This involves, amongst others, accreditation, training programmes for vocational training and quality assurance. Since these regulatory bodies are

still relatively new, their effectiveness (or lack thereof) has not yet become apparent.

IV. THE WAY FORWARD — POSSIBLE EDUCATIONAL POLICY PRIORITIES

This paper has offered an exploration of some policies that Sub-Saharan African countries have adopted to facilitate the implementation of the Education for All goals as well as for attainment of the Millennium Development Goals. This report also has highlighted some of the innovations that have resulted in success stories in Africa.

On the basis of the documented experiences, it is evident that there are success stories from the region that can be used to address some of the pressing educational challenges. The table on page 27 offers a summary of the identified challenges as well the possible policy priorities that can be pursued to tackle the identified problems.

Challenges	Possible education policy priorities
Limited access to educational opportunities	<ul style="list-style-type: none"> • Abolishment of school fees. • Relieving parents of indirect educational costs (related to such items as transport, uniforms, school levies, etc.). • Continuous assessment of effective use of the available space in schools, with a view towards ensuring its optimum use. • Effective exploitation of the available ICT infrastructure.
HIV-AIDS pandemic	<ul style="list-style-type: none"> • Provision of support to orphans and other vulnerable children to enable them to continue with their schooling. • Promotion of a multi-sectoral approach to fighting HIV-AIDS, exploiting opportunities within such sectors as education, health, social services, ICT, etc.
Low funding of education	<ul style="list-style-type: none"> • Increasing budget allocation to education to at least 6% of the national budget, as per the recommendations of the World Education Forum held in Dakar, Senegal, in 2000. • Identification of diverse sources of funding for education.
Illiteracy	<ul style="list-style-type: none"> • Recognition of and support for the role of non-governmental organizations (NGOs) in the promotion of literacy. • Striving for and consolidating partnerships between government agencies and NGOs in literacy delivery. • Combining literacy delivery strategies of campaigns, programmes and projects to enhance the advantages of each.
Quality and relevance of education	<ul style="list-style-type: none"> • Development of a life skills curriculum as well as the capacity to deliver such a curriculum. • Promotion of high-quality and relevant vocational education programmes. • Reforming curricula to incorporate contextual issues in their content. • Encouraging community participation in education. • Training and deploying qualified teachers.
Culture and diversity	<ul style="list-style-type: none"> • Incorporating local languages in the education system, particularly for the initial phases of the system.

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Innovation and Revitalization of Education in Sub-Saharan Africa: Educational Programmes, Pedagogy and Teaching Tools

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I. INTRODUCTION

This evaluation study focuses on educational programmes, pedagogy and teaching tools. It has adopted the International Standard Classification of Education (ISCED; UNESCO 14). For the purposes of this study, the ISCED 97 is simplified to four levels: level 0 for pre-primary education, level 1 for primary education, level 2 for secondary education and level 3 for higher education. The reason for adopting this simplified ISCED is to facilitate comparisons between education systems in Sub-Saharan Africa, as there are considerable differences in their modes of organization and functioning.

This introduction covers three important themes that are necessary to the understanding of how education systems have evolved in Africa. The first is the basic frameworks of international consultations and their assessment of education in Africa since the International Education Conference in Addis Ababa in 1961, held under the aegis of UNESCO. The second concentrates on the quality of education, while the third concerns the repercussions of globalization. The methodology of the study and the adopted plan are then presented as the last two points of the introduction.

I-1. The major international consultation frameworks

The role of education in development no longer needs to be demonstrated (World Bank, 1988). Sub-Saharan Africa has not been completely oblivious to the numerous reforms of education systems that have been undertaken (a process that is continuing), nor have its education systems been impervious to efforts made to place education at the service of human and social development. The diagnoses that have been made, from the International Education Conference in Addis Ababa in 1991 up to the World Education Forum held in Dakar in 2000, the recommended guidelines for action and their assessments form a bulky database. The leading international co-operation organizations are at the origin of this database: mainly UNESCO, the World Bank, UNICEF and UNDP. (See UNESCO, UNICEF and IBRD, 1990; Delors, 1996;

UNESCO, 1999, 2000a, 2001, 2002, 2003, 2004, 2005; UNESCO/Dakar Pole, 2005a, 2006a; etc.)

I-2. Quality education

Since the World Conference on Education For All, which took place in Jomtien, Thailand (UNDP, UNESCO, UNICEF and IBRD, 1990), and the World Education Forum of Dakar (UNESCO, 2000b), the recommendations submitted during major international meetings and the accompanying research have all placed emphasis on quality. Quality is mainly the result of a combination of five factors. The first of these relates to policies on education, which in turn leads to the second factor: financing. The third factor has to do with enrolment and retention. The fourth concerns mainly content and teaching strategies, while the fifth is devoted to human and material resources.

Among these five factors, two appear to have a significant impact on the outcomes of educational action: first, contents and strategies and, second, resources. Contents and strategies are important because they reflect political orientations and put them into operation in the form of educational measures that can be effectively observed. Resources, meanwhile, form a series of relevant indicators regarding the determination to implement policy decisions. Programmes, strategies and resources are vital for education because they play a direct role in shaping people and in helping them to achieve personal fulfilment as individuals, citizens and producers. This explains, through a retroactive loop effect (Morin, 1986: 100–101), the vital role played by education in human development.

To achieve the expected results, contents and resources must imperatively meet certain criteria of quality (UNICEF, 2000; UNESCO-BREDA, 1998; World Bank; Boucharde and Plante, 2002; Barnabé, 1995; AIU, 2005, 2007; AFIDES, 2005; Sall, 1996; Sall and De Ketele, 1997; UEMOA, 2004). These criteria encompass the notion of relevance (UNESCO-BREDA, 1998). Over and above the local contexts that need to be taken into account, African education systems also should adopt international standards (Behrens, 2006). Quality and relevant contents, strategies and teaching resources are the keystones of education systems.

The overall quality of contents and strategies must be looked upon as a continuum that starts with pre-primary education and extends over a lifetime, with the possibility of considering each level of education as an entity (a self-sufficient segment). Bearing this in mind, after early childhood care and education, all leavers of the successive levels, from primary education (level 1) to higher education (level 3), should show that they have acquired the life skills required to fully develop their potential.

Viewed from this angle, every learner leaving primary or secondary school, and even after one year of higher studies, should be sufficiently equipped to be useful to the community both intellectually and morally. If this is accomplished, education will indeed prove to be at the service of training human resources. Its effects will be measured through fundamental acquisitions, these being translated as knowledge, inter-personal skills, a lifelong learning capacity and know-how. It is essential to acquire a spirit of enterprise, starting from school, given the numerous economic difficulties suffered by many countries in Sub-Saharan Africa in addition to the effects of globalization.

I-3. The repercussions of globalization on education

This view requires the elaboration of interactive educational programmes and strategies, from pre-primary level through higher education. These programmes also should be adapted to different contexts and numerous needs in order to be aligned with the fixed objectives to be accomplished. The contexts range from local to worldwide scales, from the natural environment inhabited by the learner to the most distant in space (and even time) in a world that has become a global village.

The world as a global village is characterized by an increasingly tighter interdependence between human societies. And interdependence, in turn, leads to a high mobility of people and the necessity to adapt to new situations or demonstrate skills that are in keeping with those required by the host environment. Globalization has led to an interweaving of economies and their consequent production of goods and services.

Globalization exposes education to free competition throughout the world in general, and in Africa in particular. The new rules it has set in motion impose further difficulties for African education systems, which are not always adequately prepared for them (Altbach, 2004; AIU, 2005; AAU, 2004; Bowles, 2005; Halvorsen and Michelsen, 2004; Knight 2004; Solaux and Suchaut, 2002). Countries are trying to adjust their education systems to face this pressure; in West Africa, for example, this exercise is being carried out with the support of the West African Economic and Monetary Union (UEMOA, 2004).

I-4. General methodology of the study

The study on educational programmes, strategies and teaching tools is based mainly on significant experiences observed in Sub-Saharan Africa. The educational experiences mentioned are analysed and appraised from the angle of the assessments drawn up by leading international co-operation organizations working in the area of research on education.

International assessments of education in the world in general, and in Africa in particular, draw their inspiration from the first six editions of the Education for All Global Monitoring Report (UNESCO, 2000a, 2001, 2002, 2003, 2004; UNESCO/Dakar Pole, 2005a, 2006a), the reports of UNICEF (UNICEF 2000, 2003a, 2003b), the World Bank (World Bank, 2001, 2006), and the Population Council (Lloyd and Hewett, 2003). The conclusions of these reports are, in turn, subjected to an effort towards understanding and extension, thanks to research on education.

I-5. Presentation of the findings of the study

The results of the study are presented in five parts: educational programmes (II), specific programmes (III), pedagogy and teaching methods (IV), teaching tools and technology (V), and conclusions (VI).

II. EDUCATIONAL PROGRAMMES

Section II-1 deals with the pedagogical foundations of action in the field of education, the need to move from a concept based on an approach through programmes to a concept centred on curricula. Four themes are then discussed: the needs for lifelong quality education (II-2); the question of indigenous programmes, taking into consideration the specific features of each country in Sub-Saharan Africa (II-3); the life skills required for full personal development of the individual (II-4); and the issues of the languages of instruction (II-5a) and the teaching of science and technology (II-5b).

II-1. From programmes or broad fields of education to curricula

Like the distinction made between levels of education, programmes are conceived according to the definition of the ISCED, which defines them as broad groups and fields of education (UNESCO 14). Since education is centred mainly on values, a study of educational programmes in Sub-Saharan Africa must take into account both the major political decisions taken since the Addis Ababa Conference (UNESCO 1961, UNESCO 1 to UNESCO 12) and the missions and goals of education. (See Box 1.)

The will to adapt contents and improve their efficiency has returned to the centre of preoccupations and research, especially since the International Education Conference held in Jomtien, Thailand. (See UNESCO, 17; Robinson, 2003; Crisan, 2006; Republic of Niger, 2006; Jonnaert, 2004; ADEA, 2005). From the Conference of Ministers of Education of African Member States (MINEDAF I), held in Addis-Ababa in 1961, to MINEDAF VIII (Dar-es-Salam, 2002), the issue of contents, co-operation and regional harmonization in the field of education have been among the recurring themes discussed at all Conferences of African Ministers of Education (UNESCO, 1961; UNESCO, 1 to 12).

Even though great efforts still need to be made, notable results have been recorded in the targeted fields. The most significant innovations of the programmes were introduced in the social sciences, particularly the teaching of history and literature. However, other demands have

emerged at the same time as the determination to Africanize education. This applies to the basic missions of education, for instance. Education is increasingly perceived as a duty to offer individuals opportunities to learn, develop and fulfil themselves throughout their life. The Delors Report (Delors, 1996) is frequently considered to be one of the central pillars of this view. However, the need to look upon education as an action that lasts for a lifetime, in fact, goes back to the early 1980s with the Club of Rome Report (Club of Rome, 1980).

To implement these general views, research on education seems to place priority on moving away from an approach based on educational or teaching programmes in favour of curricula (see Box 1; Depover, 2006:8–11). “A curriculum is an educational plan that encompasses contents, methods, learning resources, and evaluation procedures.” (Depover and Noël, 2005:11). Curricula are constructed on the values, needs, expectations and interests of individuals and communities (Demeuse and Strauven, 2006; Depover and Noël, 2005).

The revitalization of education in Sub-Saharan Africa must take four major constraints into consideration when integrating the fundamental principles of the curricula approach: the demands for lifelong quality education for all; the design of indigenous programmes in line with the local characteristics of learners; the introduction of the skills that are indispensable for the personal development of individuals in their environment; and the languages of instruction and teaching of science and technology.

II-2. Demands for lifelong quality education for all

More than ever, the world is characterized by two newly emerging phenomena: it is becoming globalized at the same time as the renewal of knowledge is accelerating. This dual characteristic has major consequences on education, both throughout the world in general and in Sub-Saharan Africa in particular. The educational programmes provided in Sub-Saharan Africa should, in fact, be designed for all levels of education and teaching, taking into consideration the demands produced by these two phenomena. As a result of these new demands, it is necessary to draw up curricula based on two viewpoints:

openness to adopting flexible curricula, and the need to establish closer links between educational measures and a stronger interrelationship between theories, practices and experiments.

Flexible curricula, it seems, should play a key role in a world characterized by an accelerated renewal of knowledge and know-how. In this regard, according to Jesus Maria Sousa (in Boumard and Bouvet, 2000), flexible curricula offer the advantage of covering different levels of understanding. By introducing flexible curricula in teaching and training, it is possible to combine and inter-link the universal, the singular, diversity, competition and solidarity in a globalized world.

In this sense, the curricula drawn up for different levels of education should gradually broaden the prospects offered to learners, moving one step at a time from the most singular to the most global (universal). The singular stresses the local characteristics of the living environment of the learner. Skills founded on local particularities can gradually expand to reach out to other realities and encompass the diversity of the world. Diversity helps to deal with teaching contents in a less self-centred way, with a higher degree of relativity and a more open attitude towards an interdependent world. It is in this respect that the universal encompasses what is common to the human species, to all societies and civilizations — hence, the need for a stronger sense of solidarity. And solidarity can be easily justified by sustainability.

To put it simply, “sustainability (can be perceived) as a way of managing the social, economic and environmental consequences and opportunities (of material and human resources) in order to transform them into lasting advantages at both local and world levels” (<http://www.vancouver2010.com/fr/Sustainability>; in French).

Given the numerous upheavals suffered by Sub-Saharan Africa, one of the ultimate goals of education should be to aim at sustainable development. In 1987, the Brundtland Report defined sustainable development as an objective that “meets the needs of the present generation without compromising the ability of future generations to meet their own needs.” It must include three pillars: the economy, the environment and social equality ([http://](http://fr.wikipedia.org/wiki/Durabilit%C3%A9)

fr.wikipedia.org/wiki/Durabilit%C3%A9; in French).

Understanding sustainable development in this way implies acquiring new skills through action in the field of education. One of these skills is acquired through environmental education (a science in its own right, which stands at the junction of several disciplines), as defined by the Belgrade Charter (UNESCO-UNEP, 1976, quoted by Legendre, 1993:460). According to the Belgrade Charter, the purpose of environmental education is “to develop knowledge, values and new attitudes, the key factors for achieving a better quality of environment and, consequently, a better quality of life, for both contemporary and future generations living in this environment”. In the view of Sauvé (quoted by Legendre, 1993:463), for instance, environmental education “actually integrates many aspects of education, including scientific education, civic education, political education, economic education, aesthetic education, social education, moral education and personal education”. All these disciplines should be taught from a very early age. However, identifying the various disciplines that compose education for sustainable development, including environmental education, requires a pedagogical method based on an inter-disciplinary approach and not on mere juxtaposition.

In order to develop adequate skills for education for sustainable development, including environmental education, innovations need to be introduced during the very first years of formal education. An initiation into education for sustainable development and environmental education should start from early childhood, taking into account, in particular, the Meeting of Experts on the Psychological Development of Children and Its Effects on the Educational Process, held in Urbana, Illinois, USA (UNESCO 13, 1974).

Inter-disciplinarity should, therefore, lie at the centre of educational action. In comparison to the programmes currently dispensed by education systems (like the one in Senegal, for instance), all disciplines or major fields of education — such as ecology, economics, sociology, social anthropology, history, geography, etc. — should be strengthened in school contents by adopting a scientific approach. Innovations should consist of initiating learners as early as possible into scientific methods specific to these

**Box 1: Depover, C. (2006). Conception and management of curriculum reforms
Paris, UNESCO, ED/EPA/2006/PI/18 March 2006**

CURRICULA AND STUDY PROGRAMMES

Among the aspects that distinguish curricula from study programmes, focusing on the outcomes of education occupies a determining position. Thus, in a curriculum, efforts will be made to express the goals of the education system in reference to what is expected from learners, whereas in a study programme, the interest will centre more on what the teacher should do to obtain these results.

To guide teachers on the way they should organise their lessons, some study programmes include methodological explanations. In a curriculum, on the other hand, efforts will be made to indicate what is expected of pupils without being prescriptive as to how teachers should organize themselves to obtain these results. Although it is considered useful to guide teachers in their choice of methodology, they will be provided with explanations in the form of a specific document, such as a teacher's textbook or a methodological guide.

The study programmes proposed to teachers have for a long time consisted in explicit reference to the subjects that should be taught. On the other hand, a curriculum concentrates exclusively on what pupils will be capable of achieving on the basis of those subjects. By replacing these study programmes with curricula, there has been a gradual shift from concentrating on the contents and the way they are organized, to a marked interest in what pupils can achieve on the basis of the contents they are taught. This shift in focus, from the subject to the learner, has also led to an interest not only in the logic of the subject but also, and above all, in the dynamics of the learning process.

The curriculum is part of a long-term approach that is closely connected with the choice of educational policies and governmental strategies on education. Examples are the Ten-year Plan for Education and Training in Senegal, the National Charter of Education and Training in Morocco, and the Ten-year Education Development Programme in Mali. Even though, strictly speaking, these educational policies do not always fall under the competence of educational authorities, it is often important to clarify the links between the curriculum and educational policy in order to understand clearly the logic of the curriculum.

OBJECTIVES AND SKILLS

These two notions are often used when referring to the operational aspects of the curriculum — that is to say, those that directly concern the practitioners of education. These objectives serve as short-term milestones (usually a teaching sequence) of educational action. This is why they normally lead to very precise formulations, making it easy to check whether the fixed goals have been accomplished. The notion of skill is usually more global and refers to the outcomes of education from a more long-term point of view (a few days or a few weeks) but, above all, it seeks to describe situations in which the different skills mobilized should be put into operation. As illustrated in the examples below, the implementation of a skill is linked to a context directly related to the situations that learners will have to handle in their everyday life or in the context of their future professional activity, such as communicating information, making decisions, arguing, solving a problem, etc.

OBJECTIVES

- To pronounce correctly the phoneme /i/ as in piece, peace, peel;
- To use vowel and consonant sequences correctly;
- To mention the distribution structures proposed to housewives in a district;
- To cite arguments in support of an idea.

SKILLS

- To produce, in a situation of communication, and in response to an external request, a statement set out in intelligible terms (correct pronunciation of phonemes, clear articulation of syllables and words, the right sequence).
- To prepare and conduct an investigation with a view to knowing the place where the housewives of a district make their purchases.
- To give a well-argued opinion about a situation encountered at school or in the family.

An approach based on skills, applied through using real-life situations as models, leads to giving preference to a concept of learning that is both global and interdisciplinary whereas an outcome-oriented pedagogy favours the systematic division of contents into small units that will be studied successively and usually in the context of a specific discipline.

In practice, the distinction between objectives and skills is not always clear. For some, a skill is limited to grouping together several objectives around a situation, while for others, it is a question of inter-linking a series of skills to be able to handle a complex situation or a task directly connected with the professional, social or family integration of the learner.

constantly evolving fields of knowledge and know-how. Placing emphasis on scientific methods of investigation presupposes “the development of abilities to find, evaluate and explore scientific information..., to sharpen the critical mind, to seek to analyse and clarify values in the choices involved at the different phases of a scientific investigation ... and to recognise the close links between science, technology, society and the environment” (Sauvé, quoted by Legendre, 1993:465).

Reinforcing the views of Delors (1996), innovations should centre mainly on acquiring methods for lifelong learning (learning to learn) by adopting a genuinely critical attitude and by becoming familiar with deductive and inductive methods. In this regard, nothing can replace experimentation and demonstrations of actual situations, in the field if necessary, and frequently outside the school. More attention, therefore, should be paid to manipulation and manual activities for the purposes of verifying what could, appropriately, be called hypotheses.

Scientific education, which has been rehabilitated in the education systems of Sub-Saharan Africa, together with its closely related disciplines mentioned above, are “essential for the study and elucidation of environmental problems and the implementation of solutions” (UNESCO-UNEP, 1992; quoted by Legendre, 1993:464). Its principle objective would be the solution of numerous problems and difficulties faced by this part of the world. And, to attain this goal, the pedagogical attitudes towards education in Africa need to be reversed.

Pedagogical views in Sub-Saharan Africa are too frequently focused on literary studies to the detriment of scientific and technical disciplines. In many countries (in fact, in nearly all countries), there are more students in the literary sector than in scientific, vocational and technical courses. This trend should be reversed drastically. The preference given to studies leading to jobs in offices and public bodies should be rectified by rehabilitating manual work and direct observation, starting from school, and by strengthening the position and number of hours devoted to the exact sciences (mathematics), the experimental sciences (physics and chemistry), the observational sciences (life and earth sciences), technology, etc.

Hence there is an urgent necessity to strengthen skills, acquired mainly through education, to solve the serious difficulties experienced by Sub-Saharan Africa, so that it can belong directly and rightfully to the international scientific community. In other words, the skills to be acquired throughout education should be conducive to fighting against recurring hunger and famine in this part of the world, and also against pandemics such as malaria, drought, and the spread of deserts and desertification resulting from massive deforestation. They also should contribute to ensuring access to drinking water and health care for all, as well as finding clean and new sources of energy, etc. In addition, these targeted skills should lead to the personal development of individuals while respecting the indigenous values of the living environment and integrating them into educational action.

In general, school systems, school contents and programmes, and methods of teaching must focus on education for sustainable development, at all levels. This includes skills-based studies for environmental integrity, economic viability, and a just society for present and future generations (see UNESCO’s website for education for sustainable development: http://portal.unesco.org/education/en/ev.php-URL_ID=27234&URL_DO=DO_TOPIC&URL_SECTION=201.html).

II-3. Indigenous programmes

Despite the considerable efforts made since the Conference of Addis Ababa in 1961, the teaching contents and educational methods in force in a large number of African countries continue to be rather extrovert in nature. New dynamic initiatives should be taken to achieve greater relevance and to ensure that educational programmes and methods are consistent with the real needs of Africa.

Bearing this in mind, the design of programmes constructed around an indigenous curriculum at the beginning of school education should be founded mainly on the values of each community. It should then spread, in concentric circles, to encompass the most common values of Sub-Saharan Africa and, finally, the rest of the world (see also Bernard, Nkengne and Robert, 2007). Additional efforts should be made to introduce contents specific to this part of the world into the education system. In this

respect, history and geography (and their closely connected disciplines), literature (written and oral/transcribed, traditional tales and poetry, etc.), as well as the life and earth sciences are conducive to determining the contents of education. And these disciplines should slowly shift from the immediate environment of the learners to those that are further away in space and time. Learners should be taught, at a very young age, how to acquire a broader understanding of their own world, as well as a better and more effective knowledge of the environments and populations interacting with the original milieu. Young learners should gradually build up a solid knowledge of all major groups and fields of education that form the cultural identity of societies and human groups in Sub-Saharan Africa. The contents, therefore, will be determined in relation to the large natural regions of the continent.

Learning and gradually acquiring a deeper knowledge of the major groups and fields of education should be oriented towards a better understanding of oneself and of others, to achieve a more fertile dialogue — this being a source of mutual understanding and tolerance. Education should prepare individuals to live in harmony with their environment and with others: hence the need to acquire skills for lifelong personal development.

II-4. The skills needed for personal development

The lasting acquisition of skills needed for personal development throughout a lifetime require an evaluation of the teaching programmes and activities applied at different levels of education and training, from early childhood to higher education. For this purpose, every country will equip itself with structures for evaluating and managing its education system, or will reinforce already existing ones. Based on a systemic approach, the priority of periodic assessments will be to define the quality and relevance of the education offered.

The objective, in this case, is to set up a permanent observatory on education that could eventually contribute to programmes designed to evaluate the skills appropriated by pupils. The task of this type of observatory (UEMOA, 2004:35) would be to provide information to decision-

makers, beneficiaries of educational action and users, periodically and at the opportune time. Observatories of educational action also will serve to improve the collection of data in order to conduct and facilitate comparisons of the results of sub-regional and regional assessments. The creation of national observatories, and a general one common to all countries in Sub-Saharan Africa, will take into account the experience gained by the Monitoring Learning Achievement (MLA), the Programme for the Analysis of Educational Systems (PASEC) of the Conference of Ministers of Education of French-speaking Countries (CONFEMEN), the Southern African Consortium for Monitoring Educational Quality (SACMEQ), etc.

These models should be strengthened to improve their efficiency and overcome their limitations, which relate mainly to the “comparability of results within the same survey” and the “comparability of the results of different surveys” (UNESCO/Dakar Pole, 2005:69). Bearing this in mind, one of the medium-term objectives would be to create an effective observatory on education in Sub-Saharan Africa to serve as a reference for all countries.

To attain the goal of setting up an observatory on education in Sub-Saharan Africa, evaluations will be carried out according to a grid designed to take definitions of quality in education into consideration. Among the definitions in force, the ones of UNESCO and Pigozzi (UNESCO, 2004:32), UNICEF (UNICEF, 2000) and the World Bank are a good starting point.

In addition, the structure for the evaluation and governance of education systems will ensure the relevance of teaching programmes. They will pay special attention to their degree of coherence with the missions of education, as well as the needs and expectations of society and individuals, in a context of globalization and the tendency to consider education as a marketable commodity. Considered from the angle of relevance, the study should examine the links between education, productive activities and professional integration (UNESCO, 1998).

To achieve the requisite results, the management services of education systems should rely on indicators related, in

particular, to the unemployment rate and to the percentage of students who have integrated into the world of work on completion of their studies. They also will need to evaluate policies on educational programme exchanges, co-operation and the integration of African educational systems. Comparisons will range from sub-regional to regional levels, with a view to achieving greater harmony between education systems.

Ways of harmonizing education in Sub-Saharan Africa can be envisaged by placing emphasis on two points: languages in education, and the teaching of science and technology.

II-5a. Languages in education

Referring to the importance of the language of instruction, *The EFA Global Monitoring Report 2005* stresses that:

“Most countries of the world are bilingual or multilingual. Hence national language policy and the selection of languages to be taught in school and used as the media of instruction is of considerable importance for the quality of teaching and learning. It is a policy choice with implications for curriculum goals, content and pedagogy. It is also an intensely political matter. As UNESCO notes (UNESCO, 2003b): ‘Educational policy makers have difficult decisions to make with regard to languages, schooling and the curriculum in which the technical and the political overlap. While there are strong educational arguments in favour of the mother tongue (or the first language of instruction), a careful balance also needs to be made between enabling people to use local languages in learning and providing access to global languages of communication through education.’”
(UNESCO 2004:154)

In general, it seems to be accepted that initial literacy programmes in the mother tongue facilitate the learning of a second language as the medium of instruction (UNESCO, 2004:154–157). The analysis made by the UNESCO 2005 Report, backed by examples of the accompanying policies on languages of instruction, refers mainly to countries in Sub-Saharan Africa (UNESCO, 2004:154–157). Very often, the languages used for instruction perpetuate past heritage. Many countries in Sub-Saharan Africa still have education systems that use a foreign language (English, French or Portuguese)

as the main language for teaching and the medium of instruction. However, the countries still concerned can derive benefits from the review of experiments under way and those that have been undertaken elsewhere, outside of this particular geographical zone (for example, in North Africa, Mauritania, etc.).

The introduction of national or regional languages as the main medium of education does not exclude the urgency of introducing a second language of international communication in education. A second language should be introduced into the educational system as early as possible. The experiences of several countries have shown that children learn and master languages more easily when they start at a very young age. Niger seems to have opted for introducing national languages into its education system at a very early stage. (See Box 2.)

However, given the wide diversity and large number of African languages, as well as their geographical limitations, the major languages of international communication used in numerous education systems in Sub-Saharan Africa should be retained by improving their teaching and practice. Adding a second language of international communication in the education system will depend on the existence of a first language of a similar nature. A major argument in favour of introducing a second language as early as possible (in early childhood care and education centres, or at the beginning of primary education) is based on improving communication between linguistic areas dominated by languages such as English, French, Portuguese, etc. Bilingualism practiced in school also will have the advantage of facilitating dialogue and fostering mutual understanding among the individuals benefiting from this. (By way of example, French-speaking countries in Sub-Saharan Africa could adopt English as a second language, while English-speaking countries could adopt French as their second language.) The purpose of this option would be to develop bilingualism in all countries.

Learning a second language would, in this way, help to consolidate international communications and inter-African co-operation, these being vehicles of integration.

In terms of innovative programmes for the introduction of several languages in education, the above-mentioned 2005 Global Monitoring Report puts forward consistent arguments in favour of a gradual strategy. It would appear that:

“There is now a strong body of evidence that bilingual schooling offers significant benefits in learning outcomes. In the most successful models, the mother tongue is used in the early years of schooling so that children can acquire and develop the literacy skills that enable fuller participation in learning activities. In a growing number of countries, after four or five years (earlier in some cases) there is a transition to learning and using the second or foreign language as the medium of instruction. In this way, initial literacy is acquired more easily, facilitating the acquisition of the language that will become the medium of instruction for the rest of the school years” (UNESCO, 2004:154–156).

The arguments put forward by UNESCO are backed by the results of experiments in progress in Sub-Saharan Africa. In Senegal, for example, a growing number of pre-primary and primary schools offer their pupils English lessons, in addition to French, the official language of instruction. This practice tends to widen social disparities in the area of education, because only pupils attending private schools or

special early childhood care and education centres benefit from an early initiation into English.

To ensure social equality in countries where such practices and experiments are being developed — but also to facilitate and improve communications between countries in this region — French and English could be adopted ipso facto as the second teaching language, starting from early childhood care and education centres. An innovation of this type would take into account the arguments and illustrations developed in the 2005 EFA Global Monitoring Report (UNESCO, 2004:154–157). The experiences of Papua-New Guinea and Zambia could inspire many countries in Sub-Saharan Africa.

“In Zambia, a 1996 policy statement, ‘Educating Our Future’, agreed with the National Reading Committee’s (NRC) conclusions. With external assistance from the United Kingdom’s Department for International Development (DFID), the Ministry of Education initiated the Zambia Primary Reading Programme (PRP). This programme was a systematic attempt to improve reading and writing in all primary schools, with goals for each grade level: basic literacy in a familiar language by the end of the first year of primary education, basic literacy in English by

Box 2: Republic of Niger, Ministry of Basic Education and Literacy, General Secretariat National Advisory Commission for the Orientation of Curricula/Observatory on Reforms in Education/University of Quebec in Montreal (February 2006). Implementation of the Ten-year Education Development Plan/PPDE. Framework of Guidelines for Curricula.

http://www.ore.uqam.ca/Archives/Documentation_txt.asp

LANGUAGES OF INSTRUCTION

In conformity with the education orientation law (LOSEN) and in line with a radical reform of curricula, particular emphasis has been placed on teaching in the mother tongue or the first language of pupils during the first stage of basic education. Study programmes therefore will be adapted to all national languages and tested throughout the country. This experiment/extension will be founded on the model of experimental schools, with achievements that have been demonstrated by several studies.

In principle, it is a question of initiating education in the mother tongue or first language of learners in order to establish basic skills, and then gradually move towards French, the teaching language, in the second stage of basic education, the national language becoming a subject of teaching in this cycle. In concrete terms, the modalities for handling languages in these experimental schools are as follows. During the first year of the first sub-cycle (CI), teaching is exclusively in the maternal or first language; French is introduced orally in the second year of the first sub-cycle (CP) and in written form in the first year of the second sub-cycle (CE1). Starting from the first year of the second sub-cycle, French becomes the language of instruction and the mother tongue or first language is taught as a subject in its own right. As for non-formal education, the language of instruction depends on the choice made by the target group.

the end of the second year and improvement in the teaching of reading at all grade levels through appropriate training and materials. Early assessments and evaluations have been encouraging. More broadly, the focus on literacy has helped secure observable success in that parents and communities have responded warmly to the change” (UNESCO 2004: 156).

The multilingualism advocated by these experiences requires the implementation of official strategies and instructions aimed at improving the quality of learning through a perfect knowledge of the teaching languages. Clear policies must be adopted, especially in countries where pedagogical practices are similar to those of Senegal, and where pupils and teachers speak a pidgin dialect that is inappropriate for education of an international standard. Such practices have a negative effect on performance levels, especially in French, as disclosed by international evaluations. For example, “In six of the French-speaking countries covered in the PASEC study (including Senegal) [1997-2001], between 14% to 43% of grade 5 pupils have low achievement in either French or mathematics” (UNESCO, 2004:227).

The introduction of national languages, like the introduction of a second language of international communication, should be founded on solid pedagogical methods, avoiding the use of teaching styles that are typical of popular dialects (as this heavily undermines the quality of education). For example, very frequently in West African countries such as Senegal, teachers do not hesitate to resort to local languages when teaching their classes and giving explanations to their pupils. Teaching pupils in a pidgin composed of local languages and French usually results in their knowledge of French gradually declining at nearly all levels of education, including university.

A perfect knowledge of the teaching languages also facilitates the achievements of pupils, especially in scientific and technological disciplines.

II-5b. The teaching of science and technology

As upheld by the authors of a study undertaken by the Regional Office for Education in Africa (UNESCO-BREDA,

December 2002), “the impact of science and technology on society no longer needs to be proved, it is sufficient to see what is happening around us to be convinced.” These authors also quote Baez, who stresses that:

“Whoever lives in a modern town or near a modern town, in any part of the world, has an opportunity to see, hear and touch all day long a multitude of objects that show to what extent the life of men and women are conditioned by science and technology. Science and technology exert a crucial influence and have been powerful factors of social change throughout the history of mankind, even though what we call science today is not even three hundred years old”

(UNESCO-BREDA, December 2002).

The teaching of science and technology must be reinforced, and its methods updated, based on the link between theory and practice. Children should be introduced to an inquiry-based approach to science at the youngest age possible. Young pupils should learn about science through entertaining and motor activities at the pre-primary level, and later through relatively more formal activities at primary school. The French experience, known as “la main à la pâte” (see Box 3), applied in West Africa (Senegal, Benin and other countries), could be extended to the rest of the continent.

According to the on-line encyclopaedia Wikipedia:

“La main à la pâte is a pedagogical operation for teaching science at school in France. Created in 1996 by Professor Georges Chaptal, it is an innovative way of teaching the sciences at primary school. It places the accent on scientific learning, knowledge of languages, education and citizenship. This programme is designed for teachers to enable them to help their pupils discover an aspect of science through different experiments on specific theme: water, time, waste, gear mechanisms, electricity and many other subjects. This is carried out with the help of a student, researcher or resource person who can give the teacher scientific support.... This way of teaching science was imported from a method used in the USA but similar approaches have emerged in France, notably through the association Planète Sciences, thanks to different scientific projects, including Un ballon pour l'école, also based on experiments and construction carried out by the pupils themselves.”

(http://fr.wikipedia.org/wiki/La_main_%C3%A0_la_p%C3%A2te)

The authors of the 2002 UNESCO-BREDA study (UNESCO-BREDA, December 2002), based on a review of the abundant literature existing on this topic, stress that: “The objectives of teaching science in general, in addition to acquiring scientific knowledge, includes the acquisition of theoretical and experimental scientific approaches, stimulation of scientific curiosity, an interest in research on the part of the learners, and the development of a sense of initiative and a questioning attitude.”

According to these authors, to fulfil the objectives of scientific education, “pupils must be taught to reflect and understand scientific facts through a series of hypotheses and experimental verifications that would require them to display initiative, know-how and rigour.” They also underline that:

“Experimental activity should not only include actual manipulation but also time devoted to reflection, intellectual construction, introspection, and discussions with the teacher. The activity of the pupil is therefore centred on the operations

that the subject has carried out, and on the results and interrelationship between the two (operations and results). In consequence, it is not reduced to concrete manipulations carried out by the pupil. In terms of school education, the entire difference between learning and tinkering is to be found in this distinction.”

The list of objectives for teaching science suggested in this study is quite exhaustive, and it also is sufficiently referenced. It thus could serve as a basis for innovation in scientific experimentation (UNESCO-BREDA, December 2002). The goals mentioned are to:

- prepare the learner to pose and formulate a scientific problem;
- show the learner how to conduct a scientific experiment;
- facilitate the reconstruction of scientific concepts;
- acquire the means for scientific communication through clear and precise expressions;
- produce graphic representations (sketches and tables), and use symbolic language, etc.;

Box 3: Liaison Newsletter of La Main à la pâte – special international supplement of issue 30, February 2005. Published with the support of the National Pedagogical Research Institute (p. 2)

“SCIENCE AT SCHOOL” ACTIONS ALREADY UNDERTAKEN:

Senegal has had relations with La main à la pâte since 1999. Several missions by French instructors were conducted for a public composed mainly of officials of the National Education Department. Scientific kits were placed at the disposal of 114 schools, in 6 of the 11 academies.

AT PRESENT

The Senegalese Ministry of Education has included several measures in its action plan to upgrade the scientific sectors. These measures include communications aimed at the general public through radio broadcasts to popularize the sciences, and the organization of scientific events, the purpose being to bring schools closer to the scientific world. This action plan also consists of a section on training teachers and creating the appropriate teaching materials. For the moment, the schools have used the French kits. At present, the objective is to create kits with the help of very simple, inexpensive and even recycled materials. These kits will be accompanied by pedagogical protocols.

THE DIFFICULTIES

The experiments undertaken so far have revealed that teachers tend to adopt an approach based on experimental demonstration without really allowing their pupils the initiative to draw up hypotheses and carry out experiments manually. Naturally, the overcrowded classes – an average of 44 pupils per class – and the lack of resources do not simplify matters. In a context in which basic skills (reading, writing and numeracy) are already difficult to achieve, how can teachers be motivated to teach the sciences? Reading and writing difficulties continue to be considerable at the end of primary education. It is probably necessary to place scientific learning more at the service of mastering a language.

Nicolas Poussielgue

http://pequenoscientificos.uniandes.edu.co/Documentos/map_inter_epreuv33.pdf

- improve the psychomotor aspect and manual skills of the learner;
- develop a capacity to make an observation;
- encourage a questioning attitude;
- transmit pre-constructed scientific models;
- adopt safety practices, etc.

To revitalize and develop the teaching of science and technology, learners should be introduced to similar objectives as early as possible in order to understand them perfectly. Sharpening the mind and encouraging an interest in scientific investigation, therefore, should be started when children are very young, and then consolidated throughout secondary school and higher education. During the first years of school, for example, activities to teach science and technology could be based on constructing and experimenting with simple assemblies, such as meccano (model construction) sets. These assembled constructions, which could become more complex depending on the grade, will be designed to help pupils understand the elementary and fundamental principles of scientific knowledge and its applications.

The option of reinforcing the quality of scientific and technological education at a very early stage should be accompanied by a closer link between theory and practice. Teaching the rules, laws and theorems of mathematics, and the principles and rules of physics, chemistry and the life and earth sciences (biology, geology, etc.) is more effective when it is built on activities and experiments carried out by the learners themselves rather than through theoretical classes or learning by rote merely for the sake of repeating the lessons in examinations.

According to the UNESCO-BREDA study on the teaching of microscience:

“In general, experts distinguish between two types of experimental approaches: the experimental approach of researchers (the scholarly method) and the experimental approach used in schools.... The scholarly approach implies the elaboration of physical concepts in six stages:

- *formulation of a research problem;*
- *formulation of theories;*
- *elaboration of an experimental protocol;*
- *practical implementation and capitalisation of the results of the measures;*

- *analysis and interpretation of the results;*
- *conclusions.”*

“(...) This approach is not sequential or linear. However, from the viewpoint of teaching, several research studies ... have demonstrated that the school experimental approach usually followed in classes consists of a stereotyped method in four stages: observation, prototype experiment, interpretation and formulation. This is how nearly all manuals on the physical sciences of the 1990s, and even later years, have set forth concepts and laws according to an approach that starts with observation and then moves to conducting a prototype experiment that usually serves to back the induction of a physical law.”

“When comparing the scholarly and school approaches, it can be noted that pupils are rarely involved in the intellectual activities of the scientist (formulating problem, elaborating theories, etc). They are mainly given technical tasks (listing the measures, assembling or dismantling tests, etc.). This is why pupils often fail to perceive the connection between experience and theory” (UNESCO-BREDA, December 2002).

Taking these observations into consideration, innovation in the field of scientific and technological education could be carried out in accordance with a minimum of criteria and conditions, notably:

- consolidation of linguistic expression aimed at a better understanding of the scientific discourse and a more precise manipulation of concepts;
- more time devoted to science, starting from early childhood care and education, and continuing throughout schooling;
- strengthening of experimentation and observation through objects that can be manipulated;
- applications and illustrations of fundamental laws and principles through situations that are close to reality (for example, by demonstrating the usefulness and application of statistics in everyday life, as applied to demography, economic indicators, etc.)

New approaches are urgently needed to revitalize the teaching of science and technology. Reinforcing scientific and technological disciplines in education systems also should be aimed at renewing technical and vocational training (UNESCO 19). It is only at this price that

education will be able to place qualified workers in the job market.

On the whole, seeking to obtain global and total quality in education requires revitalizing the disciplines needed for sustainability and environmental education. Quality education obliges countries in Sub-Saharan Africa, in particular, to consider local characteristics in order to move towards a more universal approach. To improve school performances and their impact, it is necessary to strengthen the teaching of science and technology, based on a perfect knowledge of the languages of instruction (another factor of regional integration).

In addition to these major orientations, Sub-Saharan Africa has other challenges to face because of their education systems.

III. SPECIFIC EDUCATIONAL PROGRAMMES

This section deals with four topics. The first is solving the problem of armed conflicts (III-1). The second relates to health education, including the fight against HIV/AIDS and preventive measures, a top priority in view of its impact on the quality of education (III-2). The third concerns minorities, displaced persons and refugees (III-3); this topic sheds new light on education for the prevention and fight against armed conflicts. The fourth topic is higher education (III-4), wherein it is proposed that a grid be established for evaluating universities and higher education institutions in Sub-Saharan Africa, and that programmes and experiences be pooled among universities.

Pursuing the second objective set by the Dakar Forum provides a reasonable base to build up specific educational programmes in Sub-Saharan Africa. In effect, the goal is: "Ensuring that by 2015 all children, particularly girls, children in difficult circumstances and those belonging to ethnic minorities, have access to complete free and compulsory primary education of good quality." (http://fr.wikipedia.org/wiki/Forum_mondial_sur_l'education,_Dakar_2000; in French).

However, the list of identified targets is not exhaustive. It could, in a more explicit way, include persons affected by HIV/AIDS directly (the patients) or indirectly (the orphans), those living with a disability, displaced persons, refugees, etc.

III-1. Prevention of armed conflicts

Armed conflicts are a major obstacle to development in Sub-Saharan Africa (UNESCO, 2003:128). It is acknowledged that over "80% of the world's wars are in Africa and Asia" (UNESCO, 2003:131). The prevention of armed conflicts should be a common concern of the great majority of countries in Sub-Saharan Africa. Education can attenuate the incomprehension that lies at the origin of conflicts and foster a dialogue of cultures and mutual understanding (University of Lubumbashi, 2002). The Delors Report (Delors, 1996) raises these questions and identifies areas for reflection and action. Education has always played a fundamental role of reconciliation, understanding and tolerance.

When conducting a sociological and historical review of the effects of education on the modernity and local re-composition of meaning, Sall (1996) described the role of fostering dialogue and understanding that education has played, and continues to play, by forming entire generations of Africans of various nationalities in different educational institutions. This positive effect of education on individuals, and the dynamics of mutual understanding and tolerance that it sets in motion, seems to result in cohabitation during the same time-frame and in the same area. The positive effect of education also is due to the fact that it permits individuals of different nationalities to follow similar studies and receive similar training. Cohabitation while studying in the same place and during the same period creates an esprit de corps (like in the army) and, later, the feeling of belonging to a community and to the same family.

The lessons learned from these historical experiences, combined with the situation of an armed conflict, justify the options recently adopted by the Democratic Republic of Congo (DRC; Democratic Republic of Congo, 2004) and Côte d'Ivoire (see Box 4). One of the major innovations introduced in higher education programmes in the DRC

consists of four common modules that are compulsory in all sections and at all levels. These modules deal with logic and argumentation, general psychology, the history and institutions of the Congo, and citizenship education (Democratic Republic of Congo, 2004).

Drawing inspiration from the DRC model, general psychology and citizenship education could be adopted by all education systems in Sub-Saharan Africa. The main interest in introducing general psychology would be to study the mentalities specific to each country, or to the human communities living therein, in order to encourage understanding and dialogue. Citizenship education would deal more specifically with teaching the notions of democracy and co-operation, in the same way as education on human rights and peace. It could be introduced through subtle methods adapted to early childhood education through activities within the reach of this age group. It could then continue in primary school and during the first years of secondary school by having students study books and undertake activities of a moral and civic nature. During the last years of secondary school, and later in higher education, it would be based on philosophical, political and legal studies. Citizenship education should be complemented by education on peace and on human rights.

III-2. Health education, and the fight against HIV/AIDS and its prevention

Sub-Saharan Africa has the highest number of people suffering from HIV/AIDS in the world. The specific programmes relating to health, and the fight against this pandemic and its prevention, should have a high priority, comparable to that given to the type of education designed to prevent armed conflicts.

Education can have a positive effect on these disasters. According to Tanko:

“Specialised documentation shows that women in Africa lack information and education in the field of health in general, and AIDS in particular. Many women are at risk because educators, health officers or the media fail to tell them about HIV/AIDS or explain how to protect themselves and others. And this despite the fact that, according to UNAIDS ... it has been known how to make use of education and

communication to halt HIV/AIDS all over the world for more than fifteen years. Women still have few opportunities to learn about HIV/AIDS” (Tanko, 2004-2005:55).

In view of the low rate of enrolment and retention in education systems, as well as the mediocre literacy levels among adults, the comments of Tanko, which focused mainly on women, can be extended to cover all groups and all social categories. Education in the field of health and the fight against AIDS has failed to obtain the expected results because school enrolment is still low in several countries. The low rates of school enrolment and retention are major obstacles to access to quality education for all. The negative repercussions of the mediocre level of general education of populations in terms of health and hygiene are, in turn, aggravated by social behaviour patterns, such as early marriages, traditional beliefs and taboos, and even, sometimes, religious beliefs.

Educational practices should be reversed to improve public health and hygiene. Formal education leaves very little room for educational programmes aimed at improving health and preventing HIV/AIDS. Specific programmes designed to halt major pandemics, such as AIDS and malaria, are frequently developed outside the context of formal education. Admittedly, many schools incorporate projects of the United Nations Population Programme that are intended to give students the right reflexes in terms of education on population growth. Similarly, many programmes are devoted to health education and the prevention of HIV/AIDS. Unfortunately such programmes usually enter secondary schools through the back door only. In Senegal, for example, they come in the form of secondary activities conducted by clubs, under the responsibility of an NGO or an association such as GEEP (Group for the Study and Teaching of the Population), based at the Faculty of Sciences and Technologies of Education and Training (FASTEF).

However, as Tanko appropriately stresses:

“The best potential in the combat against AIDS is nevertheless that of an educational programme incorporated in the teaching programmes of formal systems. The fact that the formal system can offer an easy-to-reach audience means it is necessary to ensure a high standard of content and presentation methods ... so that the pupils, whatever

their age, feel personally concerned by the information disseminated, and assimilate it in such a way as to subsequently change their behaviour in the right direction” (Tanko 2004–2005:115–117).

The special inter-agency team of UNAIDS has apparently adopted a similar position on the role of education in the combat against HIV/AIDS and its prevention. In effect:

“In May 2003, the team published HIV/AIDS and Education: A Strategic Approach. This recognises that the EFA and Millennium Development Goals may not be achieved in many countries because of HIV/AIDS, in many cases for lack of a coherent education sector strategy designed to respond to the HIV/AIDS epidemic. It identifies policies with the potential to mitigate the impact of HIV/AIDS on individuals, educational processes and systems, and to use education for preventing HIV infection” (UNESCO, 2003:262).

Efforts are emerging to introduce such contents in formal education in an effective way. At the sub-regional Seminar

of the Economic and Monetary Community of Central Africa (CEMAC) and the DRC, held in Douala, Cameroon, from 12 to 16 February 2007 (see Box 5), it was suggested that education in the field of health and the fight against HIV/AIDS and its prevention was a cross-disciplinary educational theme. In general, the prevention of HIV/AIDS should have a priority position in the institutions and curricula of formal education. This kind of educational option could draw inspiration from the experience and approach adopted by the Soul City Institute for Health and Development Communication in South Africa (World Bank 2004:47–75). This objective also could be founded on the guidelines recommended by CEMAC-DRC (IBE/ UNESCO 2007).

The multimedia educational and entertainment project for children in South Africa, conceived by the Soul City Institute, is aimed mainly at children between 8 and 12 years of age. The South African experience could be applied to other countries in the region. It could even be

Box 4: UNOCI launches education for peace for young people in Côte d’Ivoire COTE D’IVOIRE – 5 August 2007 - PANAPRESS

JeuneAfrique.com

The United Nations Operation in Côte d’Ivoire (UNOCI) is continuing in Elokato, in the town of Bingerville (36 km from Abidjan), the activities of its communication project on the culture of peace, launched on Friday in the presence of the Stars of Peace of UNOCI and the traditional chiefs of the village, reported PANA.

During the three-day event, about one hundred children participated in the awareness raising campaign on mediation and conflict management. They were also taught the rudiments of “non-violent communication”, and initiated into the culture of peace and tolerance.

The Director of the UNOCI Information Office, Margheita Amodeo, explained that in addition to its main mission to monitor peace in Côte d’Ivoire, UNOCI uses these activities to organize action aimed at introducing a sense of peace within each person. “We would like to help you become agents of peace through your everyday behaviour, among your family and your close circles”, she declared.

Presenting this aid project, Mrs. Amodeo pointed out that UNOCI has already undertaken several activities of a similar nature all over the country, especially in the west of Côte d’Ivoire and at Anyama, where the traditional chiefs signed a commitment in favour of peace.

Furthermore, the UN mission plans to organize training seminars on the culture of peace, designed for young people and instructors all over the country, in order to disseminate this initiative, which will benefit from a partnership with the Centre for Research and Action on Peace (CERAP).

The spokesman for the traditional chiefs attending this ceremony, Kouassi Raymond, explained their mediation methods to the young people present — in particular, dialogue and respect for others — indicating that this procedure enables the population to live in perfect harmony.

adapted to younger children, and extended to their elders. Healthy habits and the right reflexes should be inculcated in children when they are very young, while they are still able to learn and absorb what they learn as personal experiences.

The experiences mentioned above tend to give priority to including education on the fight against AIDS and its prevention in formal teaching. For this purpose, many different educational projects and programmes on population and reproduction education, as well as the fight against AIDS and its prevention, should be taught in the earth and life sciences classes, as this is their natural place.

Discrimination against HIV/AIDS patients and carriers also hits other social categories, such as minorities, displaced persons, refugees, the disabled, etc.

III-3. Minorities, displaced persons or refugees, and people living with a disability

The concepts of minorities or people with specific needs cover a variety of realities in terms of education and the way it is organized and functions. These notions apply to orphans, street children, women, etc. UNICEF produced a revealing report on “The State of the World’s Children in 2004” (UNICEF, 2004). The Forum for African Women Educationalists conducted a similar review of education for girls (FAWE, 2000, 2001). Following in the footsteps of Diane Richler from the NGO International Inclusion, it would be appropriate to add to these categories pupils suffering from learning difficulties at school. This category includes weak and below-average pupils, but also those who are exceptionally gifted:

“In most classes there are pupils whose performance is well below average and others who are well above average, which means that teachers have to be capable of teaching a range of pupils of varying capacities even though their training rarely prepares them to cope with this kind of situation. Planning often assumes that average students form the majority, but in classrooms, especially in countries facing multiple challenges, few children fit the ‘average’. Disability is simply one element of diversity that must be taken into account in a classroom. In order to address this dual challenge, school systems

must focus on how to meet the special educational needs of children with a disability while contributing to the overall improvement of the school systems” (Richler, 2005).

According to the EFA Global Monitoring Report for 2003/4, “indigenous children and young people perform less well than children of non-indigenous groups” (UNESCO, 2003:134). A number of empirical observations reveal that certain social groups tend to exclude themselves from formal education (gypsies and similar groups are frequently mentioned as belonging to this category). In Africa, among the de facto excluded groups are nomads, herdsmen and fishermen. These social groups tend to show a certain reticence or resistance to schools, and rarely send their children to school. And when children from such groups do attend school, they do not succeed as well as others.

Theories attempting to explain failure at school typically point to the social origin of the pupil, social and economic factors, and motivation. Research on the connection between failure at school and motivation/engagement should investigate this aspect further. Factors of this nature can be linked to an inadequate school system: inadequate adjustment of the context to these categories of learners and, reciprocally, inadequate adjustment of these learners to the context of formal education. These inadequacies are frequently accompanied by a lack of interest in schooling. This disinterest appears to be the consequence of a failure to cover the needs and characteristics of these marginalized populations in the curricula, organization and functioning of the formal education system.

Because these sensitive groups are poorly integrated into the social fabric and have little schooling, the host community frequently looks upon them as being on the fringe of society. They also are considered to be the perpetrators of criminal offences and acts of violence. The discrimination they are subjected to pushes them even further to the outer fringes of society. Similarly, in many countries in Sub-Saharan Africa, the attitude towards people suffering from physical, mental and sensory disabilities, or albinos, isolates them socially from the rest of the community to some extent.

In view of the obligation to include these different categories of people into their host communities, curricula must be developed in such a way as to take into consideration the results and recommendations of the World Conference on Special Education Needs, organized in June 1994 by UNESCO in collaboration with the Spanish government. The theme was “Access and Quality”, and:

“The purpose of this conference was not only to study a way to advance the objective of the Jomtien Conference on Education For All but also, and above all, to promote the inclusion of children with special educational needs (handicapped children, children with serious learning difficulties, etc.) into the ordinary educational system. It is a question of promoting the principle whereby ordinary schools should accept all children, whatever their difficulties (all handicaps, and other difficulties)” (UNESCO-BREDA 1).

Box 5: International Bureau of Education (IBE), UNESCO, Geneva, and the UNESCO Multi-country Office, Yaoundé. Sub-regional Seminar on the Diagnosis and Elaboration of Reference Documents for Education on HIV/AIDS in the School Systems of CEMAC Countries plus the Democratic Republic of Congo, Douala, 12-16 February 2007, Report, pp. 15–16.

THE RECOMMENDATIONS

Following their discussions, participants in the Sub-regional Seminar on the Diagnosis and Elaboration of Reference Documents for Education on HFV/AIDS in the School Systems of CEMAC Countries and the DRC, held from 12 to 16 February 2007 in Douala, drew up the following recommendations:

1. Organisation at country level of sessions reproducing the results of three sub-regional workshops.
2. Organisation of national workshops to elaborate and ratify programmes and pedagogical aids for HIV/AIDS.
3. Official inclusion, through a governmental act, of HIV/AIDS education in national teaching and training curricula.
4. Technical and/or financial support of the CEMAC Executive Secretariat at UNESCO, the World Bank, the International Bureau of Education and other technical and financial partners of CEMAC countries and the DRC involved in policies to integrate HIV/AIDS education in school programmes.
5. Studies on the effects of HIV/AIDS on education by six member countries of CEMAC.
6. Acceleration of the process of elaborating national policies to introduce HIV/AIDS education in school programmes.
7. Capitalisation of sub-regional expertise through exchanges of information, experiences and good practices.
8. Organisation of a preparatory meeting of experts from the sub-region for the Conference of Ministers of Education of CEMAC and the DRC.
9. Support of the CEMAC Executive Secretariat for the implementation of policies integrating HIV/AIDS education.

The framework of reference

- Inclusion of HIV/AIDS education in school programmes as a cross-disciplinary subject.
 - Three to five disciplines identified as the host disciplines for HIV/AIDS education in secondary schools and teacher training courses (N.B. primary education occupies a place apart because there is only one teacher who handles all the disciplines. It is nevertheless important to identify which discipline will incorporate which content).
 - Allocation of specific hours clearly devoted to the subject (64 hours a year).
 - Identification of vital themes (based on the recommendations of the IBE).
1. Basic knowledge to protect and promote health; a) sexual and reproductive health, b) HIV and AIDS, c) advice, treatment and care, d) myths and erroneous concepts.
 2. Me, my feelings and my relations with others: a) learning to know myself, respect myself and respect others, b) coping with difficult and risky situations, c) facing loss and mourning.
 3. Gender issues and promotion of equality between men and women: a) economic, cultural and social roles according to gender, b) gender and vulnerability, c) local norms, family life and gender.
 4. Promotion of human rights, the fight against stigmatisation and discrimination: a) rights and physical integrity, b) impact of HIV/AIDS and support for people living with HIV/AIDS, c) overcoming the wall of silence.

This framework of reference will serve as a common working base for the countries involved in order to harmonise all aspects of the problem while respecting national characteristics.

<http://www.ibe.unesco.org>

It adopted the Salamanca Declaration and a framework for action covering special educational needs, which was inspired by the experiences of the participants as well as the recommendations, resolutions and publications of the United Nations — particularly the United Nations Standard Rules on the Equalisation of Persons with Disabilities (Resolution A/RES/48/96), composed of two reference documents on the application of the principle of inclusion (UNESCO-BREDA 1).

The merit of the 1994 conference, above all, was that it conceived of “an inclusive system of education ... as a principle whereby schools must accept all children, including those who are disabled. In this way, they respond to the principle of recognising the need to work together in an integrating environment” (UNESCO-BREDA 1).

More recently, in April 2005, UNESCO-BREDA organized a workshop to validate the reference strategic framework for the promotion of literacy for the visually disabled in West Africa. This workshop observed that:

“To attain the objective of Education for All between now and the year 2015, it is not only necessary to broaden an inclusive education system for a more effective mainstreaming of children and adolescents with special needs into the ordinary education system, but also to introduce literacy programmes for adults who never had an opportunity to attend school” (UNESCO-BREDA, April 2005).

It is crucial to bear in mind that “uniform models of reform which ignore the multiple disadvantages many people face will fail” (UNESCO, 2004:231). If persons are excluded from education because of disabilities, this will have negative repercussions on the overall quality of education. To ensure that the different categories of disabled persons are enrolled and taught in formal education institutions, curricula will have to include sections that enhance the value of their culture among all students. Such curricula should seek to instil a strong sense of solidarity and a genuine spirit of understanding and tolerance among learners of the same generation and same age group. In this case, too, it is a question of enabling them to acquire new habits and reflexes that would attenuate negative discrimination.

In consequence, strengthening and improving the quality of education in Sub-Saharan Africa necessarily implies programmes that incorporate cultural and individual diversity (see Box 6). “Education should be inclusive, responding to the diverse needs and circumstances of learners and giving appropriate weight to the abilities, skills and knowledge they bring to the teaching and learning process” (UNESCO 2004:143).

Given the diversity of disabilities that can have a negative effect on the schooling of an individual, the actual concept of a disability and the ways of handling it must be redefined. Diana Richler (2005) stresses:

“First, it is helpful to recognise that special educational needs might derive from disability, disadvantage or difficulty learning. Having a disability does not, however, necessarily mean having a special educational need. For example, a physically disabled child might need a wheelchair, transportation and a ramp to get into school but might not need any academic supports. Second, all children with special educational needs could benefit from the same framework for support that could include a new role for the special education teacher, focus on new instructional strategies, commitment to staff development, sustained problem-solving orientation, and school-based services teams. Thirdly, and perhaps most important, in many countries, different departments and even different ministries have responsibility for the education of children with disabilities. Until planning for the education of children with special educational needs is integrated in overall planning, inclusion is impossible. By concentrating on inclusion, it is important to make sure that the unique needs of handicapped students are not neglected.”

“As for the United Nations Convention on the Rights of Handicapped Persons, the International Disability Caucus recommends that the clause concerning education should guarantee that handicapped students receive an education for which the State provides the learning materials through appropriate assistance measures, ways and means of augmentative and alternative communication, sign language, including the language of touch signs, Braille, relief, unprocessed texts and other alternative formats, a universal and accessible environment, sign language interpreters, assistance of all kinds, and other arrangements’.”

This is consistent with the position taken recently by organizations of persons with disabilities and their families who achieved consensus that inclusive education should be the right of all children, but that in the case of deaf, blind and deaf-blind children, there are times when a special programme may be warranted. Because many are not able to provide peer support, they argue that blind, deaf and deaf-blind children and young persons should have the right to receive education in their own language and in their own group.

What was missing after Salamanca was a mechanism for linking these proposals to more general efforts at reform. Because most planning for broader educational reform is done without considering students with disabilities or other special educational needs, changes are being made that will actually make it more difficult for students with disabilities to be included in the future. For example, every time a new school is built without meeting requirements for physical accessibility, generations of physically disabled young people are sentenced to be excluded from regular

schools. Every time teacher-training programmes are modified without preparing teachers to teach at multiple levels, or when special education teachers are trained to work only in segregated settings, a generation of students with special educational needs is sentenced to remain out of regular classes. Every time national standardized testing is developed without allowing for accommodation of differences, students with special educational needs are destined to fail. Furthermore, the more that is invested in educational reform which excludes students with special educational needs, the more costs will be incurred in the future to retrofit these systems.

Although the recommendations from Salamanca are far from being implemented, there are hopeful signs that the concept of inclusion of all students in regular education is taking hold. Inclusive education in Africa is gaining momentum across the continent and is now supported by three coinciding and complementary initiatives that are shaping education reform and provision throughout Africa. The Education For All initiative, the New

Box 6: Céline Chevarin, Kristelle Hourques, Valérie Jay, Céline Salvador, Anne-Claire Tyssandier: Education et Pauvreté, Le cas de l'Afrique.

Another African problem concerns child labour and the civil wars raging on the continent that use children, referred to as child-soldiers. Since the usual type of schooling cannot reach these children, who are not enrolled at school or have dropped out of school, a non-formal education system has been developed to cater for such groups.

First of all, non-formal education is an innovation that breaks away from usual practices by providing special programmes for children who need to be taken into consideration because they have been pushed to the fringe in institutional and pedagogical terms. It also gives a second chance to the beneficiaries themselves, as well as to the country and its development. In effect, for the former, it is an opportunity to catch up with what they have lost or missed in education, and for the latter, it is an occasion to fulfil a duty, that of providing education for all children of society.

The adopted strategy takes into account the difficulties that obstruct schooling. Flexibility and adaptation are the key words to retain the beneficiaries in these programmes by offering a "customized" education. For the programme to meet the needs of the target population to the greatest extent possible, it is constructed in such a way as to fit in with the activities of the learners in order to ensure their regular attendance, as this would encourage them to stay in the system. This is why the weekly timetable varies between four and twenty hours, depending on the availability of the children, and with the agreement of their parents. The weekly day of rest and the school holidays are deliberately chosen to suit the activities of the learners and for climatic reasons. It is the school that reaches out to the learners, by taking into consideration their socio-cultural and socio-economic background, and not the other way round.

The outcome is that children without access to formal schooling can receive educational services of a good standard and therefore look forward to a better future. Thanks to the knowledge they have acquired, they can find a job, and even integrate or re-integrate into the educational circuit. This is a victory for the international community involved in non-formal education in general and literacy in particular.

<http://w3.univ-tlse1.fr/LEREPS/>

Partnership for Africa's Development (NEPAD) and the Africa Decade for Persons with Disabilities (1999–2009) all require governments to make new investments in education to ensure that all children attend and complete primary school. In addition to these initiatives, a multi-stakeholder body, the Association for the Development of Education in Africa (ADEA), consisting of African Ministries of Education, education-related international organizations in Africa, education specialists, researchers and development agencies, is working to support a regional movement for education by promoting a policy dialogue, developing partnerships and building national capacity to provide good quality education in Africa.

Nevertheless, it is necessary to bear an important factor in mind: this process of change in the area of education is slow. Rivalries between agendas frequently end in negative results in terms of achieving specific objectives. The development of inclusive education will not be possible until teachers start to acquire a better understanding of the way to teach different students. Teachers, too, need time to organize and perfect collaborative strategies for mutual assistance and the solution of problems. Assessment strategies must take into account the different strengths and needs of students, and the systems should be assessed not only on their success in teaching students with a strong propensity to study but all children as well.

It is not enough for funding agencies to identify programme components that can contribute to integrating disabled children into regular educational systems — even though this is, at least, a first step in the right direction. In addition, these agencies need to incorporate their concerns about disabled children with their other activities related to education. As long as multilateral institutions and major donors continue to contribute to education reforms that do not take into account children with disability, they actually contribute to a cycle of exclusion. Donors, governments, educators, organizations of disabled persons, and groups representing other excluded and marginalized children should unite to create collaborative approaches to implement a genuine inclusive education. We must give responsibility, confidence and resources to schools so that they can set in motion a process of solving problems and acquiring expertise. Investments in a few African countries could help to improve models that can be replicated all

over the continent. For disabled persons to be included in education, it is necessary to invest not only in educational systems but also in families and communities. Early childhood education is necessary, and it is also important to eliminate stereotypes that result in numerous families hiding their disabled children.

People with disabilities, together with their families and their supporters, see education as the key to lives as full citizens of the future. Interest and openness towards the concept of inclusive education has grown, but this has been outside the central debates about education, where ultimately the concept of inclusion must be considered if it is to have any real chance of success. Inclusion needs to become central in policy and planning at all levels — from the local schools through Ministries of Education and multilateral, regional and international institutions. Consider children and youth with disabilities in all educational programmes, or they will always remain out of the education systems forever.

III-4. Specific programmes in higher education

Higher education has a vital role to play in strengthening the quality of education. Its task is to train teachers and ensure, through research centred on the context, the relevance of teacher training programmes, school programmes, outcomes of education systems, etc.

Higher education also plays an essential role in meeting many challenges, such as the armed conflicts faced by Sub-Saharan Africa. The Democratic Republic of Congo has pointed the way by incorporating compulsory modules on the prevention of armed conflicts that are common to all courses. The four modules, already mentioned above, concern (1) logic and argumentation, (2) general psychology, (3) the history of institutions of the Congo and (4) citizenship education. The general objectives that can be assigned to the last three modules have already been discussed. As for the first module (on logic and argumentation), its interest in higher education is obvious. The main objective would be to enable students to argue their point of view by adopting a critical spirit and by producing a written dissertation at bachelor's degree level after the first four years of higher studies. This exercise

prepares students for dissertations at the master's, doctorate and Ph.D. levels. If adopted by other countries in Sub-Saharan Africa, this innovation could be broadened, especially by incorporating the history of sub-regional and regional institutions.

On a different level, African universities and higher education institutions have their own challenges to face. These challenges concern the relevance of the courses available, the research undertaken and international visibility. African universities must not be cut off from the rest of the world; they need to develop along the same principles and requirements as universities and higher education institutions in the rest of the world. African universities should fulfil international standards by taking into account the liberalization of the education sector and the free competition that now characterizes it, the growing number of private higher education institutions, and the increasing trend to relocate universities from the North to the South. The rampant privatization of public higher education in numerous countries of Sub-Saharan Africa also obliges them to adopt strategic management practices and to achieve economic profitability. International comparisons between universities and higher education institutions all over the world oblige African universities to carry out their own renovation processes with a view to increasing their visibility and occupying a position in the international classifications of higher education structures.

In this regard, it is impossible to ignore the fact that African universities often are badly positioned, or even absent, in the classifications of the most frequently quoted systems of international comparisons, such as those of Berlin and Shanghai. The Berlin model, which can be consulted on the Webometrics site, explicitly states that "Africa was excluded for practical reasons" (http://www.webometrics.info/comparative_methodology.html). Even in the case of systems that take them into account, the African universities with the best ratings are below the 350th position. Among those that are included in these classifications, the top ten universities in Sub-Saharan Africa are all in South Africa. The Cheikh Anta Diop University occupied the 15th position among the top African universities in the June 2007 listing (<http://www.socialcapitalgateway.org/fra-rankingafrica.htm> (in French);

http://www.webometrics.info/top100_continent.asp?cont=africa).

In-depth research should be devoted to the performances observed and to the absence of African universities in classifications based on international comparisons. In general, the criteria adopted by the Academic Ranking of World Universities of the Shanghai Jiao Tong University Institute of Higher Education (<http://ed.sjtu.edu.cn/en/index.htm>) and the Webometrics site of Berlin (http://www.webometrics.info/comparative_methodology.html) for international classifications are difficult to apply to African universities. On the other hand, there is a:

"classification of the best African universities by InternetLab (Observatorio de Ciencia y de la Tecnología en Internet), a section of the Spanish Research Council. This classification is based on the quality indicators of the university websites, their size, their visibility on search engines, and the diversity of their content. The criteria shared by most international comparison systems relate to visibility. In this sense, the Internet (should now be) one of the fundamental means of disseminating knowledge, especially at academic level, and ... evaluations of university activities should take into account the capacity of universities to use the network for better visibility" (<http://www.socialcapitalgateway.org/fra-rankingafrica.htm>; in French).

The universal nature of the most commonly used criteria, and the absence of African universities due to these evaluation mechanisms, means that intermediary systems for assessing African universities and higher education systems need to be adopted. Sall & Ndiaye (2007) propose a grid specially designed to fit the African context. Inspired by the Berlin and Shanghai models, the grid is composed of four dimensions and nine indicators:

1. Student/teacher exchanges: 25%
Exchanges could be evaluated through the mobility of students and teachers:
 - The mobility indicator of students would relate to the number of students from one university attending another university outside the country to follow courses or undertake research activities, for a limited period.
 - The mobility indicator of teachers would relate to the number of visiting professors on mission in other

- African universities outside the country.
2. Coordinated/concerted action on education/research: 25%
This would be assessed on the basis of two indicators:
 - The complementary study programmes between two or several universities in two or several countries.
 - The existence of research projects jointly undertaken by two or several universities in two or more countries.
 3. Communications in another language: 25%
Scientific communications would be assessed according to a combination of three indicators:
 - The number of occasions on which teachers of one university participate in scientific events organized outside the country (seminars, conferences, etc).
 - The number of communications presented by teachers of one university in a different language from that of their university of origin.
 - Dissemination and accessibility of publications and research results through publication in sub-regional and regional journals.
 4. Usefulness to the community: 25%
Two indicators of usefulness to the community are put forward:
 - The number of teachers of a university directly involved in activities or services of an economic and social nature outside their university.
 - The number of times the findings of research carried out by a university are applied to activities and services outside that university.

The grid proposed by Sall is aimed mainly at introducing specific programmes to raise the quality of studies and research in higher education in Sub-Saharan Africa. It focuses on the criteria that could incite universities and higher education institutions to collaborate and co-operate more effectively. There no longer is any need to prove the urgency of joint programmes undertaken by several education and research institutions. For example, the Cheikh Anta Diop University of Dakar offers African and Africanist programmes and study modules to students in literature and the social sciences. These literature and history studies can be developed and broadened by other partner universities by encouraging greater mobility of students and teachers. Another example could involve French-speaking students who wish to specialize in

English literature and civilization by following courses directly in the English-speaking countries of the continent (and the same could apply to students from English- and Portuguese-speaking countries).

The grid prepared by Sall also is designed to strengthen inter-university exchanges by organizing joint scientific events and publishing the proceedings in joint journals. The objective, in this case, is to reinforce or broaden certain co-operative measures that already exist. Thus, following the example of the Afro-American Study Days organized regularly at the Cheikh Anta Diop University in Dakar, universities in Sub-Saharan Africa could organize study days using the same model. Such events would create widely acknowledged centres of interest for the continent. In the case of publications, for instance, the journals of the Council for the Development of Social Science Research in Africa/CODESRIA (<http://www.codesria.org>) and the West African Society of Chemistry (<http://www.sfc.fr/francophonie/plaquetteSoachim.PDF>; in French) would benefit from a wider and better distribution.

Both the general and the specific programmes discussed above should be accompanied by pedagogical strategies conducive to their implementation.

IV. PEDAGOGY AND TEACHING METHODS

This part deals with issues relating to the size of classes and the way they function (IV-1) and to pedagogical methods and approaches (IV-2). Particular attention is paid to the negative effects of large, overcrowded classes on the outcomes and performances of school education. Teaching methods are being devised to make learners autonomous and free them from constraining supervision. Emphasis is placed on the direct motivation and involvement of the learners.

The role and place of pedagogy and teaching methods are well acknowledged. "What goes on in the classroom and the impact of the teacher and teaching has been identified by numerous studies as the crucial outcomes variable for improving learning. The way teachers teach is of critical

concern in any reform designed to improve quality” (UNESCO, 2004:152).

The way that learners learn, and the way in which they have learned to learn, are just as important for improving quality (Roegiers, 2000; Franay, Noël, Parmentier and Romainville, 1998; Baudrit 2007; Lebrun, 2002). The quality of education depends, to a great extent, on the methods used in the classroom, the relations between teachers and students, and the “close correspondence between the values and objectives” of teachers and pupils (UNESCO, 2004:228). It also depends on the size of the classes.

IV-1. Class size and modes of functioning

The size of classes and their modes of functioning are determined by political and economic factors. These factors are subject to numerous internal and external pressures. Among the internal pressures specific to each country, those exerted by demography, trade unions and the demand for education are significant. External pressures have been the same for all countries since the Jomtien Conference and Dakar Forum. All these pressures influence policies relating to the construction of schools, recruitment of teachers, purchase of school equipment, etc. The size of classes and effective modes of functioning depend directly on the number of schools and classrooms available, as well as the number of pupils and teachers.

The quality of teacher/pupil interactions, the frequency of homework, and the opportunities offered to students to discuss and exchange ideas in class depend on the number of pupils in the class. In other words, quality mainly is a function of the number of pupils in a class. The same applies to the organization and functioning of a class; teachers are reluctant to resort to active and participatory methods, and to divide pupils into small groups, when there are too many pupils for the space available.

It is not unusual to find classes of more than one-hundred pupils in primary schools in a town like Dakar. The same observation can be made about certain secondary schools. Overcrowding also is a constant handicap at the University of Dakar. This problem of overcrowding was a recurring theme of research on higher education during the 1990s. A review of these research studies was conducted in Dakar

in 1995 during the International Pedagogical Days at the Ecole Normale Supérieure (Sall 1995).

It is generally acknowledged that the “impact of class size on pupil learning, when the range is between fifteen and thirty-five pupils, is different than when the upper limit is as high as 100, as in many developing countries” (UNESCO, 2004:67). Furthermore, the impact of class size is not the same when the teacher has to correct the homework of a hundred, or even a thousand pupils. The question of the time allotted for correcting homework and the relevant deliberations continues to be a major handicap suffered by the University of Dakar. The negative effect of class size on performance (UNESCO 2004:73), therefore, requires reducing teacher/pupil ratios. Solutions to this problem can be envisaged by exploring the possibilities offered by distance learning (see below).

As for the modes of functioning, several solutions have been tested in Senegal, with multi-grade or multi-level classes, two different streams attending two different teaching shifts, etc. When assessing the direct impact, other factors should be taken into account, including the effective number of teaching hours. In the case of Senegal, the adoption of these strategies, combined with a “continuous day” in the administrative section, seems to have reduced by half the average time spent learning at school, especially in elementary education.

Parallel to the mode of organization and functioning of education, the tacit liberation of the education sector has the effect of eliminating one day of study at all levels of education, especially in secondary school and higher education. Since teachers from the public sector are frequently in demand by private educational institutions, which are growing at a relatively fast rate, they often seem to be in a hurry to finish serving at their original public institution in order to sell their skills and experience to private establishments. These new practices have resulted in negative effects on several factors of schooling outcomes. Learners are increasingly subjected to timetables and pedagogical activities that are not compatible with the fixed school calendar and good assimilation of the contents taught.

The new behaviour patterns of teachers call for ethical solutions and new pedagogical approaches.

IV-2. Pedagogical methods and approaches

The pedagogical methods practiced by teachers depend largely on the class size. The advantage of direct participation by pupils in the learning process has been proved since the introduction of active methods based on established psychological and organizational knowledge. The merits and efficiency of the most commonly practiced pedagogical approaches and methods, such as structured teaching (UNESCO, 2004:154), outcome-oriented pedagogy and a competency based approach (Dolz and Ollagnier, 2002; Roegiers, 2000), frequently depend on the training received by teachers, their scholarly culture and their personality.

However, other approaches or methods are being developed or renewed, thanks to the cognitive sciences and computer technology. The same applies to co-operative learning (Baudrit, 2007), collaborative learning, open learning and discovery-based instruction (UNESCO, 2004:173; see also <http://www.educnet.education.fr/dossier/eformation/modularite1.htm>).

The main lesson to be learned from this profusion of pedagogical methods and approaches is to adopt one or several strategies that position the learner at the heart of the learning process. Teacher-dominated practices and lecture-driven methods must be abolished; learners should be at the centre of the learning process, and they should feel motivated and involved in their studies and education. At the same time, self-teaching and peer tutoring are highly recommended. These methods have the obvious advantage of developing a critical mind, a personal curiosity, a quest for knowledge and a spirit of initiative. By proceeding in this way, formal education can help to attenuate certain social practices that impose passive and submissive attitudes in African societies. Intellectual passiveness and socially acquired submission can have inhibiting effects on developing a critical mind.

However, pedagogical methods and strategies are feasible and efficient only if they are backed by adequate teaching

materials, aids and equipment. They also require systemic approaches, as the Special United Nations Initiative for Africa seems to indicate:

“The successful experiences of rural schools show some or all of these characteristics:

- A “child-centred pedagogy” rather than a “teacher-focused approach”: active teaching methods geared more towards learning than teaching;
- Intensive co-operation between highly qualified teachers, less qualified teachers and community members and parents;
- A continuing learning process grouping several levels combined and resources in the educational environment; older or quicker pupils helping the younger and weaker ones themselves or to work in small groups;
- Ongoing regular training of teachers and mechanisms for mutual training and monitoring (among peers);
- Use of technological resources for teaching: the use of distance learning, radio, and sometimes television courses;
- Integrated follow-up and evaluation of student and teacher performance so as to help the schools learn from their own experiences;
- Sustained relations between children and adults, through the interactive relationship between schools and local communities;
- Participation of the community, parents and students in, among other things, the general orientation and management of the school and the development of materials;
- Use of daily and weekly timetables and calendars of the school schedules adapted to local realities”

(UNISA: <http://www.uneca.org/unisa/publication/basicfr.pdf>).

In short, pedagogical methods and approaches are strongly linked to two components: (1) the institutional factors falling within the scope of educational policies and (2) the training and professionalization of teachers. In general, current policies seem to focus on school enrolment rates — that is, on quantitative indicators rather than on qualitative indicators. But the latter are more sensitive to the relevance of education and, therefore, deserve special attention.

The professional skills displayed by teachers are promising signs of high school achievements. On the other hand, the massive recruitment of unqualified teachers as soon as

they leave primary school, or at the end of the first three or four years of secondary school, obviously has negative effects on pupil performance. Therefore, it is urgent to ensure that teachers have a perfect knowledge of the languages of instruction, to give them initial training in keeping with the level of education they will be teaching, and to offer them continuing education during their career. Economic profitability and an appropriate use of pedagogical equipment, often acquired at great cost, depend on satisfying these minimal conditions.

V. TEACHING AND TECHNOLOGICAL MATERIAL

This section deals with textbooks (V-1) and technologies (V-2). It envisages solutions to the shortage of books and examines information and communication technologies (ICT) that encompass computers and the Internet, radio, television, the written press, etc.

V-1. Textbooks and teaching aids

Of all the questions relating to teaching materials, the problem of textbooks and documentation is the most crucial one in Sub-Saharan Africa (see Box 7). In his review concerning textbooks, Kantabaze reveals a situation that seems to be unanimously acknowledged by researchers on education and international co-operation organizations. He refers to results showing that:

“In ten developing countries ... the relationship between mediocre results and the lack of school books was more significant and stronger than other variables, such as the qualifications of the teachers, the size of the classes ...”

(Kantabaze, 2005–2006:104).

He backs his point by quoting the World Bank:

“Research results agree in claiming that the supply of teaching materials, especially textbooks, is the most profitable way of improving the quality of primary education. The shortage of textbooks in African classes is a disturbing problem. It may be due to this factor that the gap has widened between this region and the rest of the world”

(Kantabaze 2005–2006:104).

The view of the World Bank was the object of a warning in

UNESCO’s EFA Global Monitoring Report on Education for 2005, which stresses that:

“Effective teaching and learning require wide and equitable availability of learning materials. In many countries, this is not the case. This situation calls for urgent attention, including rethinking of policies governing production and distribution of textbooks and other learning materials, and the training of teachers in how to use learning materials more effectively, in line with good teaching practice. For many countries, providing every pupil with a complete set of textbooks is only an ideal target” (UNESCO, 2004:159).

The corroborating observations made by authors interested in the question of textbooks in Africa are accompanied by other comments that add to the problems facing schools in many Sub-Saharan countries. In fact, in addition to the shortage of books:

- The textbooks available on the international market for school programmes are not adapted to the contents and methods advocated by reforms in Africa.
- The cost is prohibitive for the great majority of households, with the rare imported textbooks still being useful.
- There are no authors and publishers of suitable textbooks, etc.

The situation is not as gloomy as it may seem. A growing number of countries (Benin, Senegal and others) have become aware of the importance of textbooks and have, in consequence, set up structures to produce and distribute them. However, these national efforts come up against several obstacles: problems relating to local authors of textbooks, their training, copyrights, etc. frequently remain unsolved. These issues usually result in weaknesses in the distributed products. The number and distribution of textbooks produced locally raise economic and financial problems for countries trying this out. The small size of national markets seems to act as a bottleneck for any vague intention to publish textbooks in Sub-Saharan Africa.

In view of this shortage, an alternative and provisional solution would be to request faculties of education and teacher training institutions to produce pedagogical documents. The former Ecole Normale Supérieure in Dakar produced and distributed pedagogical documents known as DOPEDOC that were highly appreciated by

teachers. It, therefore, possesses an expertise in this field that could be shared. Similarly, teachers should be trained to create pedagogical documents based on works that are accessible to them, such as press articles, pictures, etc. Another solution might be to download pedagogical resources from Internet. As UNESCO has pointed out: “Training in the use of newly introduced materials and continuous support to teachers should be an integral part of teaching and training materials development” (UNESCO, 2004:159).

V-2. ICT in Africa

A working document by the Coopération Française and the Ministry of Education in Senegal, *Etat des lieux sur les TICE a Sénégal*, describes the status of ICT in education in Senegal. A more ambitious study by Karsenti

(2006), *Agenda panafricain de recherche sur les usages pédagogiques des TIC*, about a Pan-African research agenda on the pedagogical uses of ICT, was submitted to the International Development Research Centre (IDRC). In this study, Karsenti points out that “in several countries in Sub-Saharan Africa, there is a strong political will to introduce ICT in education. But national policies on ICT are not clearly formulated” (Karsenti, 2006).

Field research exists, along with programmatic views (see Boxes 8a and 8b). Between 1998 and 2002, a Canadian and a Senegalese researcher, Sall and Michaud, carried out research on the introduction of ICT in basic community schools and on raising the standard of learning (reading and writing, mathematics, hygiene, national languages, etc). Another objective was to explore the possibilities offered by ICT to ensure the functional literacy of adults,

Box 7: Abdoulaye Diagne (2006), Republic of Senegal, Ministry of Education, Department of Planning and Reform, Ten-year Programme for Education and Training (PDEF). Economic and Financial Report 2005. Provisional Report, Dakar: Consortium for Economic and Social Research (CRES), 18 April 2006, p. 34.

4.1. AVAILABILITY OF TEXTBOOKS

The number of books per pupil is far from reaching the objectives set for the second phase of the PDEF. The Letter on general policy for the education and training sector reckons that the pupils of the CI/.CP classes should have two books each, while those in the other elementary classes should have five. These ratios should be reached in 2007. In 2005, the average ratio was 1.3 per pupil (table 37a). If the number of textbooks available per discipline is examined, it will be noted that although nearly seven children out of ten have a reading book, only five and two pupils respectively have a textbook on maths and a textbook on science. The situation prevailing in 2005 is hardly better than in 2002 when the average ratio was 1.2 books per pupil. The availability of textbooks per discipline has not changed significantly either, since slightly over six out of ten children had a reading book, three out of ten a maths book and two out of ten a science book. In fact ... only the year 2003 recorded an improvement, with an average ratio of 1.6 books per pupil. But the fact that no books were acquired the following years lowered this ratio. On the whole, it can be considered that access to textbooks continues to be difficult for pupils despite the significant increases in public expenditure allocated to the education sector (see Section VI). In reality, all the research on developing countries confirms the crucial role played by books in improving the learning achievements of pupils.

The findings of research carried out on the Senegalese educational system (Section V) stresses the very positive influence of textbooks on the cognitive skills achieved by pupils. Furthermore, priority should be given to free textbooks as one of the strategies to attract the children of poor families who are at present excluded from school mainly for economic reasons, as revealed by the Report on the Analysis of the Education Sector (Ministry of Education, 2004). Finally, the free distribution of schoolbooks in 2005 was favourably received by all parents of pupils, and was considered to be an indicator of the positive changes that the PDEF had started to introduce in the education sector. It is highly regrettable that this factor of attracting populations to the Programme has been neglected, especially since budgetary constraints were not put forward as a justification.

The situation is hardly better in middle school. Each pupil should have a minimum of five schoolbooks, but on average, three pupils had to share two books. This ratio is much higher than for previous years. In 2003, there was only one book for three pupils and less than one book for three pupils in 2004. The doubling of the ratio between 2004 and 2005 can be explained by the acquisition of 764,847 textbooks for teaching middle and secondary school classes, which was financed by IDA. The absence of grants for middle school textbooks in 2005 and 2006 means that the ratio achieved in 2004 will fall for at least the next two years.

especially women (Sall, 1993, 2001, 2006; Sall and Michaud, 2002a, 2002b; Michaud and Sall, 2005). The plan was to introduce media-covered teaching based on classroom lessons and distance learning, under the most typical conditions prevailing in many Sub-Saharan countries, in deprived peri-urban and rural areas lacking electricity and telephone lines, etc.

Research like that carried out by Sall and Michaud clearly pinpoints the conditions and ways to introduce ICT on a relatively large scale in the education systems of poor areas. These studies insist on strategies to train teachers on how to make use of the advantages offered by ICT, their involvement in the design of the contents to be placed on line and in the educational system, as well as strategies to ensure their perpetuation and appropriation by the beneficiary communities, etc. This research also has the merit of having fully explored the possibilities of distance learning.

The search for a solution to equip schools with computers, to train teachers and to show learners how to use the resources available on Internet for educational purposes lies at the heart of the S n clic Project (Wal Fadji, 4/8/2007; Lambey, May 2007; Wade; Le Soleil). According to Claude Lambey, Director of the ICT Department of Besan on, the following progress was made in the education sector:

- *“23 schools set up so far, with 500 computers, 1000 PCs planned for the end of 2007*
- *Construction of an establishment for the handicapped*
- *7 people recruited for the S n clic Unit*
- *Acquisition of cleaning material, recycling of PCs under way*
- *Start up of the workshop at the end of 2007”* (Lambey, 2007).

Information and communication technologies are major assets for the diversification of sources of documentation on pedagogical and learning technologies. Distance education is one of the most promising technological resources available. Used judiciously, it will improve the quality of education in Sub-Saharan Africa. Being multi-form by definition, exploring the opportunities provided by distance education would improve the questions of access

to education, teacher training, handling large groups, etc.

A large number of Sub-Saharan countries are not impervious to the lure of distance education. Among the initiatives that are being developed are Coselearn (<http://www.coselearn.org>); Association of Francophone Universities/AUF (<http://foad.refer.org>); UN Special Initiative for Africa (<http://www.unisa.ac.za>); Kenyatta University, Kenya (<http://www.ku.ac.ke>); and Makerere University, Uganda (<http://mak.ac.ug/makerere>).

The most recent initiatives in Senegal include:

- the web site <http://examen.sn>, designed to help learners prepare for their end-of-cycle exams, from the end of primary school to secondary school, with a pedagogical assistance service for learners;
- the web site <http://www.volontaires.sn>, intended for the distance training of education volunteers; and
- the web site <http://www.fastef-portedu.ucad.sn>, a database for researchers in the field of education.

Following the example of the African Virtual University (<http://www.avu.org>), distance education is developing increasingly, especially in the area of higher education. Thanks to the resources of distance education, the School of Librarians, Archivists and Documentalists of the Cheikh Anta Diop University in Dakar offers distance learning courses in many African countries (as far as Madagascar). Following this example, the Faculty of the Sciences and Technologies of Education and Training at the Cheikh Anta Diop University provides a master’s course in distance management, evaluation and piloting of education systems. This programme is being developed in partnership with the Dakar Pole for the sectoral analysis of education (<http://www.poledakar.org>).

The examples mentioned encourage all parties concerned to search for synergies between the institutions and countries in which they are being developed. As an extension of the initiative of the Digital Solidarity Fund, or within the framework of broadened co-operative actions, distance education offers numerous opportunities for exchanges and co-operation among countries in Sub-Saharan Africa. Some of these countries have easy access to satellites, or possess their own. These countries can

place such resources at the disposal of education in Sub-Saharan Africa to renovate and revitalize it, and to raise the standard of teaching and training. This sharing process, however, requires a more effective framework for co-operation and exchanges.

The advantages offered by ICT to education are not restricted to computers; hence, the concept of ICT at the service of information and communication technologies for education (ICTE). Pedagogical applications can also be derived from the possibilities offered by FM radio or television broadcasts.

“Radio and television broadcasting has not been eclipsed by computers, and both radio and television continue to be used in classes. A series of teaching projects by radio, based on the active participation of pupils in the classroom, in response to questions asked by the teacher over radio, has been implemented in many countries in the world, and has obtained interesting results from the point of view of learning. (...) Radio can enrich and maximise basic education services at a much lower cost than television or computers”

(Hilary Perraton and Charlotte Creed, February 2000, http://www2.unesco.org/wef/fr-leadup/fr_findings_techno.shtml; in French).

Several African countries, especially those belonging to the Community of Learning (CAL), have acquired useful experiences that they can share. The Soul Buddyz experience, undertaken in Africa for the prevention of HIV/AIDS, clearly shows the advantages that can be derived from the combination and profile of televised series, the written and spoken press, the theatre, etc. (World Bank, 2004:47–75).

Lessons can be learned from the past. Based on the experiences of the 1960s with school radio and television in countries such as Niger, Côte d’Ivoire and Senegal, education systems in Sub-Saharan Africa should take into account the renewed interest they arouse and the possibilities of improving education both in terms of quantity and quality (see above, the successful experience reported by UNSIA). Whatever the technological option chosen by a country or group of countries, pedagogical equipment and teaching materials should be robust and adapted to the environmental context, the pedagogical objectives, etc. Beneficiary countries should be capable

of maintaining and repairing school equipment and teaching materials in the surrounding schools. Ideally, the communities in question should have the ingenuity required to produce some of the material needed for educational purposes. Teachers should receive the necessary training for the conception, maintenance and repair of teaching materials and pedagogical equipment used in their school and classes

To summarize, technology offers a large number of solutions to the problems afflicting education in Sub-Saharan Africa. All the initiatives that can be recommended imply the adoption of inventive policies. Customs and taxation policies should be adjusted to facilitate the imports of products, materials and equipment for schools and educational structures. The same applies to access to the Internet, and telephone and electricity connections. Preferential tariffs would appear to be the sine qua non condition for achieving the eight Millennium Development Goals by the deadline. (<http://portal.unesco.org/education/>).

Each of the objectives identified in the MDGs — 1. To eradicate extreme poverty; 2. To achieve universal primary education; 3. To promote gender equality and empower women; 4. To reduce child mortality; 5. To improve maternal health; 6. To combat HIV/AIDS, malaria and other diseases; 7. To ensure environmental sustainability; and 8. To create a global partnership for development — requires specific educational action. In particular, although enrolling children in school is only part of the solution, achieving Goal 2 requires fresh views and a renewed political will on the part of all countries in Sub-Saharan Africa (<http://www.un.org/french/millenniumgoals/goal2.pdf>; in French).

Box 8a: ICT and Education

A. Depover, C. (2006). Conception and management of curriculum reforms, Paris: UNESCO ED/EPS/2006/PI/18, March 2005, pp. 51-52.

Should provisions be made for a course on information and communication technologies (ICT) in the curricula for general education?

When the head of an education system decides to release funds to equip schools with computers, the most obvious starting point is usually to create a course initiating students into technologies, first for certain specialised professional sectors and then for all pupils attending secondary school, and even at the end of primary school. This is a highly commendable approach but it now seems to be a little obsolete.

In reality, the countries that launched ambitious plans for technological equipment at the end of the 1990s have gradually abandoned this approach, described as horizontal, in favour of a vertical one based on plans to incorporate ICT in various disciplines. Incorporating ICT in the various disciplines is, in fact, better suited to the current uses of computers and new technologies that now belong not only to the domain of experts (computer technicians) but also fall within the competence of all well-informed professionals.

The aim, therefore, is to show pupils how to use the tools placed at their disposal by ICT to serve as an aid for developing new skills through all components of the curriculum and not just through one particular discipline. This approach to introducing ICT in the education system also has the advantage of bringing the different disciplines closer together on the basis of a common use of certain software. A spreadsheet, for instance, can easily be used to bring together or to structure data for the classes of mathematics and science, but also for history, geography or the first language.

Admittedly, this type of approach is often more difficult to implement than the one based on a horizontal organisation. However, it should be borne in mind that it would contribute more to the development of the skills expected from the younger generations that will belong to an increasingly technological world.

<http://unesdoc.unesco.org/images/0015/001511/151154f.pdf>

B. Inclusion of ICT in education in West and Central Africa (Phase II): Research-action training of teachers incorporating ICT in their teaching practices Mali > Lycée Koné Danzié in Koutiala.

DESCRIPTION OF THE SCHOOL

The Koné Danzié Lycée of Koutiala, established in 1994, is a secondary school. Since 1999, the administration uses computers thanks to a twinning operation between Koutiala and Alençon in France. Recently, the school has been equipped with a computer room containing twenty machines, six of which are connected to Internet. These computers were supplied by the Ministry of National Education (6), World Links (4) and Schoolnet (10).

PRESENTATION OF THE SELECTED PEDAGOGICAL PROJECT

The project consists in forming a Klanetdanzie Internet club composed of learning groups in the following disciplines: German, Biology, French, Mathematics and Physics.

The objectives of this project are to improve the quality of teaching through the introduction of ICT, diversify the pedagogical practices of teachers, incorporate in pedagogical strategies the teaching experiences of other education systems by fostering an open outlook towards the external world, and elaborate and propose pedagogical innovations to political decision-makers with a view to reforming education (especially educational programmes).

http://www.afriquetic.org/m_ldkk.php (in French)

Box 8b: ICT and Education

SENEGAL: DIGITAL SOLIDARITY – A PLATFORM FOR BASIC DEVELOPMENT

Wal Fadjri (Dakar), 4 August 2007. Published on the Web on 6 August 2007
Cheik Yero Kaba

Yesterday, the Digital Solidarity Unit at the Palais de la République (Seneclic) and the Iseg/Cesmi Group signed an agreement on the emergence of digital towns in Africa.

The ceremony took place in the presence of officials from the local authorities and associations of artisans of Senegal. These organisations intend to work together to ensure that the information society is open to all citizens.

Seneclic, the Multimedia and Internet Centre (Cesmi), and other sectors signed a protocol agreement on the emergence of digital towns. The main purpose of this agreement is to reduce the digital divide. As a first step, 23 schools have been erected and over 300 teachers trained. In addition, other centres are in the process of being constructed within the Lycée Kennedy. Under the terms of this agreement, the handicapped have not been neglected because, as Mamadou Diop, Chairman of the Iseg/Cesmi Group, declared, this social category also has the right to be trained to lead an active life in an operational manner. The President of the Union of the Association of Local Elected Representatives, Alé Lô, pointed out that this initiative is in keeping with the view of the Head of State who believes that Africa can only develop by teaching children information and communication technologies.

<http://fr.allafrica.com/stories/200708060377.html> (in French)

COMPUTER SCIENCE: ABOUT TWENTY TEACHERS TRAINED IN RUFISQUE

Source: Le Soleil

The introduction of the Seneclic system, a partnership between Senegalese schools and the town of Besançon, aimed at reducing the digital divide by giving pupils attending primary schools in Senegal computer equipment of good quality, continues to make good progress. In Rufisque, about twenty teachers at the Camp Marchand School participated in a training session on the use of this tool in the education system.

These teachers have been trained to acquire skills in the area of computer science so that they can in turn pass them on to their pupils. This was the purpose of the seminar, held at the Camp Marchand School in Rufisque, for teachers from this town, as well as from Thiaroye, Bargny and Thiès nearby.

Co-ordinated by Rémy Petit, pedagogical counsellor of the town of Besançon in France, and in the presence of Mbagnick Socé, coordinator of the pedagogical committee of the Seneclic unit, also an education inspector, this seminar provided an opportunity to become familiar with computer tools, especially the different types of software that can serve as teaching aids in the conception of lessons. This software, noted Rémy Petit, is conceived jointly by a team of programmers and a pedagogical team. There are several of them, especially for the use of basic functions. They range from mental calculation to learning how to read, and include freehand sketching. Hence the relevance of their use in the education system, especially in the Senegalese primary schools that will benefit from them in the very near future.

Rémy Petit stressed that the Senegalese government is focusing its efforts on infrastructures, through secure computer rooms equipped with ADSL telephone lines of a high standard. "It is clear that everything has been taken care of in the start-up phase. The staff are already at work", he announced.

<http://www.rufisquenews.com/>

VI. CONCLUSIONS

The implementation of all these studies on innovation with a view to revitalizing and strengthening the quality of education in Sub-Saharan Africa seems to call for adopting a systemic approach. The studies conducted on policies, teacher training, research, programmes, teaching methods and pedagogical materials constitute a whole, and form the foundation for establishing a consistent national system of education. They call for each country to look upon education as a global system that gives meaning to the sub-systems comprising it. By adopting a systemic approach, each of the different parts of the study has a retroactive effect on the others, and is closely dependent on them.

Pedagogical programmes and materials are of particular concern; they cannot, strictly speaking, be conceived or implemented separately from policies on education and teacher training, since it is these policies that make it possible to transform intentions into concrete achievements. Attention also should be drawn to the gaps usually observed between the prescribed programmes, the programmes planned by teachers for application in their class and the programmes actually taught. These gaps are due to the unavoidable corrections and adjustments that teachers are obliged to make in class. Teachers need to adapt to the learners in their class just as much as they need to adjust to specific teaching situations — in other words, a learning process that depends on the heterogeneity, level and speed of assimilation of the pupils in a class.

Similarly, the concept of a “programme”, as it frequently appears in the study, should be understood as a curriculum that can be founded on a more systemic approach. Curricula, too, should be based on skills trees and on interdisciplinary approaches that are not separated into segments (as often is the case in education). In this respect, knowledge of the language or languages of instruction is a precondition for dispensing education of a high standard, facilitating understanding by the learners, and achieving the objectives fixed by the teaching of science in general, and of mathematics in particular.

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Ghana team

Research on Education in Africa with Specific Reference to Ghana

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EXECUTIVE SUMMARY

The adoption of the Millennium Development Goals (MDGs) in 2000 appears to reflect at least two related ideas: (1) that education (and, in particular, basic education) has a strong relationship with many other development indicators, and (2) that education is, more generally, an indispensable tool for the reduction of poverty. This perspective seems to explain the enthusiasm with which African countries have since embraced the concept of universal basic education.

However, the continent still has not been able to emerge from its state of under-development. In particular, the goal of universal primary education continues to be out of reach for many countries in Sub-Saharan Africa. The levels of enrolment in schools, literacy and numeracy remain very low; fewer than 6 out of 10 children enrolled in primary school reach the last year of the cycle. Added to these woes are a lack of interest in teaching, low job satisfaction among teachers, and the calamitous consequence of the HIV/AIDS pandemic on pupils, teaching staff and parents. At the secondary and tertiary levels of education, the picture is no different. It was within this context that the United Nations University (UNU) formed its Team on Research on Education in Africa to help search for solutions to some of the problems in African educational systems that hinder the way to development.

The charge to the research team

The UNU Research Team (based in the University of Cape Coast, Ghana) was charged with preparing a background document on “Research on Education in Africa”, to be based on national experience but also take into account success stories in Africa as well as some initiatives and best practices from outside Africa. Just as importantly, the team was to make specific suggestions about innovations that could help solve some of the difficulties and bottlenecks that education systems in Africa are facing, and also make recommendations on specific policy strategies.

This paper represents a synthesis of research on important topics in education in Africa, with specific reference to Ghana. While the review does not cover all the issues on which research has been conducted on education in Africa,

it nevertheless provides insights into topics common to most African countries.

Working assumptions and mode of inquiry

The research team worked from an empirical perspective on research on education in Africa. While acknowledging that many important questions in education cannot be answered by empirical research alone, the team took as a working assumption that empirical investigations have potential for providing evidence that can inform policy and guide practice — and, hence, bring improvements. Therefore, the studies reviewed herein are mainly empirical studies (rather than position papers). The team also assumed that studies on education in Africa could best be conducted and interpreted by researchers with thorough knowledge of the political, cultural and socio-economic contexts of African countries, as well as the organizational and intellectual contexts and conditions of African schools and communities. Many of the studies reviewed, therefore, were conducted either by Africans or by non-Africans with extensive knowledge and research experience on education in Africa.

In addition to the literature review, the team also drew on team members’ own knowledge and experience as Ghanaian educators and researchers, with up-to-date knowledge on the policy context of the Ghanaian education system. As a complement to the desk-based research, discussions also were held with education policy-makers and practitioners at the national, regional, district and school levels, with a view to understanding more accurately current educational policies and practices.

The evidence on research on education in Ghana and Africa

Taken together, the research on education in Africa tends to focus on the following themes.

Access and equity: Despite the implementation of a Free, Compulsory, and Universal Basic Education (FCUBE) programme in Ghana since 1996, a significant proportion of school-age children are not in school. The gross enrolment ratio (GER) is around 80 per cent at the primary school level, a little over 40 per cent at the secondary level,

and less than 4 per cent at the tertiary level. This reflects the situation in most African countries (except South Africa, where GERs at the primary, secondary and tertiary levels are 105, 88 and 15 per cent, respectively) (UNESCO, 2005).

In Ghana, there is a significant gap between male and female enrolments in school, although there has been marked increase in female enrolment in the last decade. In 2004/2005, the GERs for boys and girls at the primary level stood at 80.4 and 70.8 per cent, respectively. The gap widens in the rural areas where there is high poverty, low parental and community support for girls' education, and under-representation of female teachers on the staffs. Data for 2001/2002 shows that the completion rate to last grade of primary education is a little higher for girls (65.3 per cent) than for boys (55.3 per cent). This contrasts with the situation in Kenya and Tanzania, where completion rates are higher for boys than for girls (UNESCO, 2005). The transition from primary to secondary school also shows higher rates for boys than for girls in all African countries.

Educational quality: Measured by the quantity and quality of infrastructure, the quality of schooling in Ghana, especially at the primary and junior secondary levels, has improved over the last two decades (mainly due to support from the World Bank). In terms of pupils' achievement, also, there has been some improvement in the two fundamental subjects (English and mathematics), though this still lags behind national and international expectations.

Teachers' preparation, recruitment, retention, status and job satisfaction: Teacher preparation in Ghana, as in many other countries, is predominantly institution-based (located in the teacher training colleges and universities), with the practicum constituting the only school-based aspect. The current policy emphasis is to upgrade the qualifications of all basic school teachers to at least diploma level.

There is a critical need for more qualified teachers in basic schools. Attrition appears to be high at this level, as most teachers who undertake further courses to upgrade their qualifications tend not to return to their post. Generally, teachers complain of low public respect, inadequate economic rewards and poor workplace conditions,

which demotivate and eventually "push" them out of the profession. Also, many candidates for teacher training have weak academic qualifications and regard teaching as a "last resort" or a "stepping stone" to more lucrative professions.

National initiatives to improve educational access and quality

Policy measures to improve educational access and quality in Ghana include increased monitoring of school performance; abolishing school fees at the basic level; promoting the education of girls, and arousing their interest in science, technology and mathematics; restructuring teacher education, and promoting greater public recognition of teachers; and responding to the HIV/AIDS menace through curricular review.

Recommendations

To address the bottlenecks in their current education systems and make them responsive to their developmental needs, African countries in general, and Ghana in particular, must consider the following:

1. Diversify the one-size-fits-all type of education in order to meet the needs of learners and teachers in different contexts, such as rural and urban schools.
2. Encourage teachers to take their destiny in their own hands, and improve their professional and social status by ensuring legal monopoly for their occupation and demonstrating high quality practice.
3. Properly conceive the decentralization of educational management to the district level, and clearly identify the roles and responsibilities of stakeholders so that the system becomes self-sustaining and effective.

I. INTRODUCTION

This paper forms part of a larger project that seeks to identify, within the framework of Education for All, changes needed in the education systems of Africa to strengthen the contribution of education to development. The paper is a background document on the subject of “Research on Education in Africa”; it draws mainly on the experience in Ghana, but, in addition, takes into account success stories in Africa and also some initiatives and best practices from outside Africa. Some “innovations” and policy initiatives that have been and/or are being pursued to help solve some of the difficulties and bottlenecks that face the educational system in Ghana (and in Africa) are described. Finally, suggestions for improvement are offered.

II. THE EDUCATION SYSTEMS OF AFRICAN COUNTRIES

While African countries have slightly different structures in their formal systems of education, they are generally close enough to allow some degree of comparison. Primary education is typically 6 years (except for a few countries where the duration is longer; e.g., 7 years in Tanzania and 8 years in Kenya), secondary education takes 6 years, and tertiary education 3 to 4 years. Most African countries have declared compulsory education for certain ages. Ghana has perhaps the longest compulsory education: nine years duration. Ghana’s education system past and present is described below.

Until the 1970s, Ghana had an educational system that was described as “one of the most developed and effective educational systems in Africa” and which promoted “a high level of student attainment at secondary schools and the universities, particularly in comparison with most other countries in SSA” (Colclough and Lewin, 1993:122–123). However, during the 1970s to the early 1980s, the country experienced a deteriorating economic climate caused by mismanagement of the domestic economy as well as external factors (including sharp increases in world prices of petroleum and a sustained fall in the prices of the country’s major exports — cocoa, timber and gold).

As a result, the real value of government spending on education dropped sharply, from 6.4 per cent of GDP in 1976 to 1.4 per cent in 1983. Consequently, teachers’ salaries remained low, and often they were not promptly paid (Nti, 1997; World Bank, 1996). Many teachers left the profession to seek greener pastures in other countries (especially Nigeria), with the result that the percentage of teachers in first-cycle schools (grades 1–10) dropped from 67.95 per cent in 1978 to 59.49 per cent in 1984 (Pecku, 1998), which necessitated the hiring of untrained teachers. The shortage of trained teachers, coupled with a deplorable educational infrastructure, resulted in a decrease in the standard of education. In addition, the education system was “unusually protracted” (pre-university education took 17 years) and “extremely expensive, and was an obvious candidate for reform” (Colclough and Lewin, 1993:122–123). Various attempts to reform the system resulted in a major restructuring in 1987.

Ghana’s new structure of education is commonly termed 6-3-3-4, comprising 6 years of primary education for ages 6–12; 3 years of junior secondary school (JSS) for ages 13–15; 3 years of senior secondary school (SSS), including vocational and technical education for 16–18 year olds; and four years of tertiary education. The primary and junior secondary levels together are designated as basic education, which is by law free and compulsory. A common curriculum comprising academic, vocational and technical subjects is followed. Basic education is both continuous and terminal, in that students who get the required grades in the final examination proceed to secondary, vocational and technical institutions if they can afford it, while those who fail to meet the requirements, or who are not able to afford it, end their formal schooling.

Students in the senior secondary study core as well as elective subjects and also take a national examination — the West African Senior Secondary School Certificate Examination (WASSSCE) — at the end of their course, for selection into post-secondary institutions (including teacher training colleges, nurses training colleges, polytechnics and universities). In terms of resources and infrastructure, only the universities and polytechnics are consistently classified as tertiary in government documents and official discourses. As Stuart and Lewin (2002:217–218) have observed, teacher training colleges

in Ghana, for example, are “monotechnic institutions that are often closer to secondary level education than to tertiary ones, and which can be isolated both intellectually and physically from centres of research and innovation”. Such monotechnic institutions offer 3-year courses to the diploma level.

In September 2007, the duration for senior secondary education became four years, while junior secondary and senior secondary are now designated as “junior high” and “senior high”, respectively. This paper, however, is based on the 6-3-3-4 structure of education.

Research on education in Ghana has tended to focus on the basic education level and, to some extent, on teachers and their preparation. This is not surprising in view of the fact that access to basic education is a national priority, and the quality of basic education depends, to a large extent, on the quality and quantity of teachers. With regard to basic education, studies have investigated issues of access and equity, quality, and management efficiency and effectiveness. Studies on teachers have addressed the related issues of recruitment, retention and teacher job satisfaction, demand and supply, and the identity of teacher trainees. The rest of the paper is organized around these themes.

III. EDUCATIONAL ACCESS, EQUITY AND QUALITY

III-1. Educational access and equity

In relation to the Millennium Development Goals (MDGs), African countries are still far from achieving Universal Primary Education (UPE). The Centre for Research into the Quality of Primary Education in Ghana (CRIQPEG) found, in its 1996 study on Basic Education in Ghana, that access to basic education was unavailable to all citizens. In a review of studies that analysed the education sector in Ghana within the period 1987–1998, the UNESCO Working Group on Education Sector Analysis (Agyemang et al., 2000) found that access and retention at the basic education level had been increasing since 1987. The study cited the gross enrolment rate at the primary level as 78 per cent for the 1991/92 academic year, but noted that this growth in enrolment lagged behind population growth.

In general, enrolments in basic schools over a 15-year period (1988–2003) increased by over 10 per cent (World Bank, 2004). Figures for 2004/2005 indicate primary GERs of 76.7, 62.2 and 88.4 per cent for the northern, middle and southern parts of the country, respectively. Data for 2006 and 2007 were not available at the time of writing, but it is likely that with the School Feeding Programme and the School Bus System, introduced in 2006, primary GER might have increased. The overall picture, however, might not differ significantly from what obtained in 1992, since population also continues to increase. At the junior secondary level, the GER varies from 60.0 per cent in the northern sector to 77.6 per cent in the southern sector.

Since 2004, the Ministry of Education, Youth and Sports (MoEYS) has assessed performance in the education sector, especially at the basic and secondary levels. The main objectives are to inform the participatory appraisal of education sector performance during the annual Education Sector Review, provide a single point of reference for all issues concerning service delivery, and provide a medium for assessing the effectiveness of the service delivery mechanisms. Consequently, the key reference points are the Education Strategic Plan (ESP) 2003–2015 — which articulates the key policies and objectives of the MoEYS, including strategies for the attainment of FCUBE, EFA and the MDGs — and a 3-year rolling operational plan for achieving ESP policies and strategies.

Three recent reports (MoEYS, 2004, 2005, 2006) show that enrolment rates have risen in the kindergarten, primary, JSS and post-basic sub-sectors. These have, in general, led to improved gender parity indicators (GPI), gross enrolment rates, and survival and completion rates at the national level. In addition, both SSS and the tertiary levels have shown rapid enrolment expansion, surpassing the targets originally set in the ESP. The reports further show that overall analysis of access to education demonstrated very positive trends in terms of student retention and transition, with very good progress towards the achievement of the 2004-05 and 2005-06 targets.

However, meeting the enrolment and retention targets for the higher sub-sectors, such as JSS, by 2015 will, in the short term, require even greater improvements in primary sector enrolment and retention in order to

produce sufficient grade 6 graduates. The 2006 report noted that although enrolment is increasing at all levels of education in Ghana, enrolment at the primary level has not been increasing sufficiently to meet the goal of Universal Primary Completion by 2015.

Like the basic level, access to tertiary education in Ghana is very low. For example, during the period 1987–1998, the universities could admit only 40 per cent of qualified applicants due to limited residential and academic facilities (Agyemang et al., 2000). Since then, there has been substantial expansion of infrastructural facilities in the universities, but this has not kept pace with the yearly increase in qualified applicants.

The picture in Ghana reflects the situation in many African countries. In Tanzania, the GERs for primary, secondary and tertiary levels in 2003 were 90.8, 71 and 0.9 per cent, respectively. Data for Kenya shows 92.4, 32.9 and 2.9 per cent, respectively. South Africa provides an exception; the respective figures there are 105.6, 87.7 and 15.0 per cent (UNESCO, 2005). The low enrolment rates for African countries, despite their legal guarantee of free education, indicate that there still remains a disjunction between official policy and actual practice.

Other ways of considering access to education are the proportion of boys and girls enrolled in school, the rates of completion to last grade of primary school, and the rate of transition to secondary school. Ghana targeted a Gender Parity Index of 1 in primary education by 2005, as indicated in the Education Strategic Plan and the Millennium Development Goal of gender parity in education. However, girls' enrolment continues to lag behind that of boys, despite a significant increase in the last decade. At the primary level, the GERs for boys and girls stood at 80.4 and 70.8 per cent, respectively, for 2004/2005. The corresponding figures for the JSS were 66.3 and 54.1, respectively.

The factors affecting enrolment of girls in school include poverty, low parental and community support for girls' education, high opportunity costs of sending daughters to school, and a lack of community action for girls' education. In addition, many girls who are enrolled in school drop out due to early marriage, pregnancy or the desire for quick

money (Agyemang et al., 2000). In rural schools, female teachers are under-represented on school staffs, and especially in headship positions, due to their unwillingness to take up appointments in such schools. The effect of this is that many girls do not have the motivation to enrol in school or study hard because they have no role models to look up to, as the few women they encounter in the villages are farmers, seamstresses or fishmongers, and housewives who "give birth plenty" (Macbeath and Oduro, 2003:445).

Data for 2001/2002 shows that the completion rate to last grade of primary education is a little higher for girls (65.3 per cent) than for boys (55.3 per cent). This contrasts with the situation in Kenya and Tanzania, where completion rates are higher for boys than for girls (UNESCO, 2005). The transition from primary to secondary school also shows higher rates for boys than for girls in all African countries.

III-2. Educational quality

The concept of quality and its indicators are contested issues, for quality is both qualitative and quantitative. Generally, however, quality in education may be conceptualized in terms of infrastructure, teaching and learning materials, class size, management and supervision, teacher education and professional training, and student achievement, among others. In practice, these variables are interrelated.

In the recent past, Ghana has enjoyed a lot of support from her development partners in the area of educational infrastructural development at the basic school level. In particular, the World Bank has contributed immensely to the provision of classrooms and teaching-learning materials. Over the period 1988–2003, it provided 8,000 classroom blocks and 35 million textbooks. An impact evaluation of the Bank's support to basic education in Ghana (World Bank, 2004) found that both the quantity and quality of schooling had improved over the last fifteen years. Enrolments in basic education had increased by over 10 per cent compared to 15 years ago. Moreover, 15 years ago nearly two-thirds of primary school graduates were illiterate, as shown by the fact that they scored two or less on a simple eight-question multiple choice English test. Today, less than one in five do so badly.

Drawing from statistical analysis, the study showed that these improvements in learning outcomes are clearly and strongly linked to better welfare, as measured by higher income, better nutrition and reduced mortality. Analysis of the economic rate of return for education showed that there is no return from simply attending school, but there is a return from learning achievements. The majority of children now benefit from attending school, both educationally and economically, implying a significant improvement over what pertained 15 years ago (World Bank, 2004). The study further indicated that gains in educational outputs are directly linked to better school quality, manifested in improved infrastructure and greater availability of school supplies, and that textbook provision is amongst the most cost-effective means of improving test scores.

Dzinyela, Kugbe, Harrison and Ghartey-Ampiah (1996) conducted a study to determine the performance of primary six (Grade 6) pupils on their assessment in English Language and Mathematics. The objectives of the study were to (a) examine whether changes observed in earlier studies had been consolidated; (b) compare the performance of pupils from urban, semi-urban and rural schools, and (c) compare the performance of pupils from intensive and non-intensive schools (intensive schools were schools that received instructional intervention from the CRIQPEG research team).

The sample for the study consisted of 14 primary schools: 8 from the Central Region and 6 from the Western Region. Three of the schools were urban, three were in semi-urban areas and eight were in rural areas. A curriculum-based assessment instrument, made up of sub-tests in oral proficiency, reading and comprehension, and writing, was used for data collection. In all, 223 Grade 6 pupils were involved: 135 pupils from intensive schools and 88 pupils from non-intensive schools.

Though the findings of the study revealed some improvement over the performance of the previous year, it noted that the quality of education in many schools was not sufficiently high to produce the level of literacy and other skills required for social and economic participation in society. Pupils' performance at the basic education level was found to be low, and this was attributed partly

to the unavailability of textbooks and other teaching/learning materials and partly to poor teacher quality and motivation. Also, the subjects in which pupils had to pass an examination were too numerous for them to cope with.

Urban schools performed better than semi-urban and rural schools. Students in intensive schools had become more proficient in speaking, reading and writing of the English language than their counterparts in non-intensive schools. Explaining their findings, Dzinyela et al. (1996) noted that national fiscal and human resources allocated to education were low, and that reforms were required to ensure an efficient allocation and management. Based on these findings, Dzinyela et al. concluded that extra efforts were needed to narrow the gap between urban and rural schools. They specified the need to improve the supply of teaching/learning materials, and to put in place improved incentive packages for teachers in order to attract higher achievers into the teaching field.

Despite the improvements made so far, education quality in basic schools still lags behind national and international expectations. One relevant factor has been teacher absenteeism, especially in rural schools. Oduro's (2003) study of rural schools in one district in Ghana revealed that most teachers absent themselves from school on Fridays to attend funerals. Teachers also absent themselves when they have to travel to obtain their monthly pay, or when they take up second jobs to supplement their income (Osei, 2006). Similar findings have been reported in other African countries. For example, a 2003 World Bank study revealed that the proportions of teachers who had been absent in the week prior to the arrival of the researchers were 26 and 17 per cent in Uganda and Zambia, respectively.

Access also is believed to be related to the level of community participation in education. Baku & Agyemang (1997) conducted a country-wide study to determine the effects of community participation on access to, and the quality of, education in Ghana. The specific objectives of the study were to (a) establish the extent to which the level of community participation in Ghana affects access to, and the quality of, education at the basic level; (b) establish critical utilization-focused information relating to types and forms of community participation in public schools; (c) determine the dimensions of community participation;

and (d) establish relationships between the dimensions and levels of community participation and access to, as well as the quality of, basic education. The method of data collection was a triangulation approach comprising survey, focus group discussion, observation and achievement testing. The primary data was supplemented by secondary data from the Equity Improvement Program, and a multi-staged sampling procedure was adopted.

The findings indicated that community participation, in one form or another, existed in all the communities, but the level of participation was generally low. Communities would like to have a say in the form and type of participation expected of them. The study identified the factors that affect participation as attitude, motivation, good local leadership, good communication links, enlightened community membership, encouragement of community-initiated participation, and the availability of basic organizational structures. The findings also revealed that access and retention were increased through community participation, and that there is a strong positive relationship between community participation and the quality of education.

Based on the findings of the study, the researchers recommended, among other items, that a bottom-up approach to community participation should be encouraged in all communities; that every effort should be made to sensitize the people to the effect that the basic education system and its organization belong to the community; that parents with children in school should be used as role models for other parents; and that more conscious effort should be made to include communities at the level of school management and administration. To encourage this, head teachers and teachers should give due respect and regard to the views of parents on issues relating to the school.

In a USAID-initiated study, Kraft (1994) analyzed basic education curricula: textbooks, syllabus and handbook. The purpose of the study was to analyse the quality of existing English and mathematics curricula, with a view to improving the quality and usage of English and mathematics textbooks, handbooks and syllabi.

Among the findings were that curriculum materials, such as textbooks, workbooks and supplementary instructional materials were lacking in schools, and that their distribution was irregular. In particular, there were few teacher handbooks in the schools, and these were repetitive and restricted the teacher to the use of a very small variety of teaching strategies in the classroom. Moreover, the content of existing textbooks and syllabi did not address the needs of the country, nor conform to modern trends and approaches in the USA, the UK and other countries. Children, especially those in the rural setting, did not have enough contact hours with teachers for effective learning, and 95 per cent of them were not achieving mastery of basic skills in mathematics and English. A large majority of school children were found to be functionally illiterate both in English and in their mother tongue. The teaching of mathematics in Ghana was found to be out of focus with what is now almost universally accepted.

Based on these findings, Kraft (1994) recommended that:

1. the Ghana Broadcasting Corporation explore the adaptation of Sesame Street and other children's programmes from the USA, the UK, Canada or Australia for use in Ghana, since educational television provides teachers and school children an opportunity to hear and use English and, thus, enhances their ability to communicate in the language;
2. Ghana consider the feasibility of adopting interactive radio, as this has proven to be a major success in Kenya and several other countries in the teaching of English and other languages;
3. a tighter management and distribution system be put in place to ensure that every child has each of the textbooks, and that textbooks be made available for purchase by parents, teachers and schools that want to obtain copies; and
4. when feasible, a large body of interesting, well-illustrated children's books in Ghanaian language, in English, and even in bilingual format be developed.

IV. TEACHERS, TEACHING AND TEACHER EDUCATION

Teachers in Ghana are trained in teacher training colleges (TTCs) or universities. In general, graduates from the TTCs teach at the basic school level while graduates from the universities teach in senior secondary and other post-basic schools. Training in the TTCs has not followed any consistent policy, but has been on an ad hoc basis. Changes in the sector have responded to the needs and circumstances of the moment, and teachers have been required to undertake more institutional training to upgrade. As a result, there are different categories of teacher qualifications in Ghana's basic education institutions. These can be summarized as:

- Four-Year Certificate "A" (Post-Middle)
- Two-Year Certificate "B" (Post-Middle)
- Two-Year Certificate "A" (Post-B)
- Two-Year Certificate "A" (Post-Secondary)
- Three-Year Certificate "A" (Post-Secondary)

According to the Free Compulsory Universal Basic Education (FCUBE) programme, basic school teachers must possess the minimum professional qualification of a Diploma in Basic Education (DBE), so all the programmes leading to the qualifications listed above have been phased out. The teacher training colleges now offer a 3-year programme leading to the DBE qualification. The DBE also is being offered as a distance learning in-service programme for untrained teachers, who are required to complete the course in four years instead of the three years for the regular residential students. A "top-up programme" to upgrade teachers with "certificate" qualification to "diploma" by the year 2012 started in the 2007/2008 academic year.

Despite the importance of teachers in education, very little research was conducted into their work and education in Ghana until the late 1990s. From that time, the work of the MultiSite Teacher Education Research (MUSTER) project of the Centre for International Education, University of Sussex has made a tremendous contribution to teaching and teacher education in Ghana. These studies, together with a few others, are reviewed below.

IV-1. Teacher recruitment and retention

Cobbold (2006b) has reviewed some studies that investigated factors which affect the recruitment and retention of teachers at different levels of the education system (e.g., Adongo, 2003; Agyemang, 2002; Soglo, 2000; Utuka, 2000; Winbila, 1999). Adongo's (2003) study is typical of the other studies, both in its design and findings. Its purpose was to identify the factors that influence the recruitment and retention of basic school teachers in the Bolgatanga District. Adongo administered a questionnaire to 256 newly qualified teachers and interviewed 6 district education officers.

Fifty-seven per cent of the teachers intended to remain in teaching (and in the district) for 1–4 years while the rest (43 per cent) planned on staying for 5 years or more. It is significant to note that, at the time of the study, newly qualified teachers were bonded to serve for 4 years before they could leave teaching, and for 3 years before they qualified for paid leave to pursue further studies. This might explain the four-year maximum retention period indicated by some of the respondents. Those who had intentions to stay beyond 4 years stated reasons such as family ties or ease of obtaining accommodation and land for farming.

Teachers and education officers were in agreement about the factors that favoured teacher retention. The most important were good school environments, accommodation, availability of health services, refunding of teachers' medical bills, and loans to purchase means of transport. On the other hand, delays in the payment of salaries (75 per cent of respondents), the low prestige accorded teachers (46 per cent), low motivation (29 per cent), delays in the payment of promotion benefits (27 per cent), lack of means of transport to school (27 per cent) and inadequate health services (24 per cent) were stated as disincentives to retention. Adongo's study is significant in providing insight into some of the factors that can be used to retain teachers at the basic school level

Sampling the views of 131 teachers and 16 administrators, Soglo (2000) sought, among other objectives, to assess the extent of teacher retention in teacher training colleges in the Volta Region. His findings parallel those of Agyemang

(2002) and Utuka (2000), who conducted similar studies at the senior secondary level in other parts of the country. Soglo described the teacher population of the teacher training colleges as “fairly old and male-dominated”, with most hailing from the region. Also, 74 per cent of the teachers were posted to the region and 65 per cent to the colleges at their own request.

Soglo (2000) reported that 66 per cent of his teacher respondents had stayed in the region for 3 years or more, while 72 per cent expressed their intention to continue teaching in the region for a further 3 years or beyond. In contrast, 50 per cent had stayed in their colleges for at least 3 years, and 53 per cent intended a further stay of 3 years or more. By collapsing these findings, we gather that at least half of Soglo’s participants had stayed, or intended on staying, in their current colleges and region for 3 years or more.

Cobbold (2006b) cautions that this must not be interpreted as a very high retention rate. But even if it is considered relatively high, it ought to be interpreted with care in relation to basic school teacher retention. This is because, unlike their basic school counterparts, the respondents were teachers with higher qualifications (teacher training college teachers hold at least a university degree) and, therefore, their urge for further studies might not be as strong as among basic school teachers who have lower qualifications. Besides, the level at which teacher training college teachers work, together with their relatively higher qualification, earns them higher respect and prestige than basic school teachers.

The study also noted that teachers who were posted at their own request were more desirous of staying in the region and in the colleges for longer periods than were their counterparts who were posted by the Ghana Education Service without such request. Across teachers and administrators, the most important retention factor is proximity to one’s hometown, as it provides a safeguard against ethnic discrimination, frequent travelling costs and the inability to speak other local languages. Furthermore, it affords the opportunity to keep in touch with families and relatives, prepare for retirement and contribute to the development of one’s traditional area. These findings seem to indicate the importance of seeking teachers’ input in the

posting and placement process as a retention strategy.

Following the heightened concern about the rate at which Ghanaian teachers leave the profession, and how this is affecting staffing (and, therefore, teaching and learning), especially at the basic school level, Cobbold (2006b) sought to find out the issues involved. Using qualitative methods, he analysed how the problem of teacher shortages had been addressed in the past; investigated the articulation between various policies intended to encourage teachers to remain in the profession, and their implementation; explored the concerns of teachers, and the extent to which these are addressed by policies; and studied teachers’ perceptions of policies, and the impact of policies on teachers’ career intentions. The study found that in Ghana, the shortage of qualified teachers has been a perennial problem in the school system. The provision of qualified teachers has never been pursued as a proactive measure in educational development; there has been over-reliance on recruitment of teachers, without putting in place a system that retains those who are trained and recruited; and teachers have not been accorded the professional and social status they deserve, a situation to which teachers probably contributed by not pursuing the professional project necessary to achieve this.

Cobbold (2006b) also found that the mechanisms used to implement teacher retention policies — such as the award of study leave, the best teacher award scheme, the rural teachers’ housing scheme, a new professional ranking and promotion system, and special deprived-area incentives — did not support the policy intentions. Retention policies were also not found to target the issues of inadequate economic rewards, low social and professional recognition, and dissatisfaction with workplace conditions, which influence teachers’ attrition intentions; those policies that targeted such issues often did not meet the teachers’ specific preferences and, consequently, were not perceived positively by teachers.

IV-2. Teacher job satisfaction, motivation and retention

The most extensive study of teachers and the teaching profession that has been conducted in Ghana is that of Bame (1991). Focusing on teacher motivation and

retention, the study was based on a national probability sample of approximately 6 per cent (N=2346) of all professionally trained teachers in elementary schools in the Ghana public education system; it used a mailed questionnaire as the main data-collection instrument. Starting with a background survey of the teaching profession, Bame sought to study the social origins, personal and professional characteristics, work and values, and general on-the-job behaviour of teachers. The specific purpose of the study was to:

“identify and analyze socio-psychological factors which make Ghanaian elementary school teachers satisfied or dissatisfied with their work and how their satisfaction and dissatisfaction interact with other factors, such as the perception of the availability of occupational alternatives, and lead them to decide to make teaching their long-term career or leave it and seek employment in other fields” (Bame, 1991:7).

The study found that 46 per cent of male and 26 per cent of female teachers were dissatisfied with teaching, and were only in teaching hoping to find better employment in the future. The most important reasons for the teachers’ dissatisfaction were low salary, lack of opportunities for advancement, and their perception of other jobs outside teaching available to them. As a result of these reasons, among others, 72 and 45 per cent of male and female teachers, respectively, had no plans to make elementary teaching their long-term career. These findings were confirmed in a later study carried out by Godwyll and Ablenyie (1996) among 100 teachers in four secondary schools in Cape Coast. In that study, the teachers ranked the three most important reasons for leaving the profession as inadequate salary, low prestige and lack of opportunity for promotion.

Bame’s work is important and has been frequently cited in teacher education studies in Ghana. However, the use of a single instrument (a questionnaire) did not allow for probing the views of the teachers, which is needed to better understand the issues studied. Also, the study covered practicing teachers who had only an initial teaching certificate and not teachers who had or were studying for degree qualifications. The latter group involves those who have been found to be at high risk of leaving (basic school) teaching in Ghana.

Wyllie (1964) studied a group of Ghanaian elementary school teachers who were pursuing further studies at the University of Cape Coast. He found that 46.6 per cent of the students did not intend to make teaching a long-term career, and that even those who chose teaching as a long-term career were highly dissatisfied with it. The variables that emerged in the study as the source of dissatisfaction were remuneration, social prestige and opportunities for promotion. Based on these findings, Wyllie concluded that a high rate of teacher turnover might remain a serious problem in Ghana for some time to come. He pointed out two implications of the problem. The first was that the teaching profession might not be able to attract graduates who are potential teachers, and/or retain a large number of graduates who already are seasoned teachers with rich teaching experience. The second was that, in order to decrease attrition, there was a need to develop and improve the career and vocational aspects of teaching, in addition to increasing remuneration.

IV-3. Basic school teacher demand and supply

Quansah (2003) conducted a study as part of efforts to address “the problem of making available an adequate number of trained teachers for instruction in schools” (p. 1). The study analysed the trend of teacher demand and supply in basic schools for the period 1997–2002, estimated teacher demand and supply for ten years (2003–2013) and developed a plan for solving the trained teacher problem for seven years (2003–2010). Essentially, the study identified the number of teachers allowed to go on study leave and the number of candidates admitted to teacher training colleges each year as “the joint levers for regulating the supply of trained teachers to schools” (p. 13). The major findings were:

- The supply of teachers from the teacher training colleges each year (about 6,000) does not meet the demand for basic school teachers.
- There is an estimated shortage of 40,000 trained teachers in the country’s public basic school system, with untrained teachers filling 24,000 of the vacancies.
- The large number of teachers permitted to go on study leave each year (averaging 94.4 per cent of new teachers who graduated from the training colleges) was the major cause of the shortage.

Using the results of the study as a basis, Quansah (2003) recommended that admission to training colleges every year should be raised from the current 6,000 to 9,000, and that the quota for teachers going on study leave should be pegged at 40 per cent of the number of newly qualified teachers from the training colleges each year. The strength of this study is its national coverage and its discovery of the primary cause of the basic school teacher shortage. Quansah's recruitment-retention strategy of increasing yearly intake for teacher training while reducing study leave approvals provides a rational solution. This strategy translates into adding 60 per cent of newly qualified teachers to the teaching force each year. But, as Cobbold (2006b) observed, there are quandaries as to how to keep this 60 per cent in service for the long-term, and how the 40 per cent who go on study leave can be persuaded to come back after their studies.

In a similar study, Akyeampong (2002) sought to provide a synthetic analysis of the available evidence about teacher demand and supply for the basic education level. He found that for a ten-year period (1987–1997), the total number of teachers at primary level fell while enrolments grew by 37 per cent — meaning that the teacher supply had not kept pace with increasing school enrolments. He also noted that from 1998–2002 demand for basic school teachers almost quadrupled. Akyeampong (2002) further identified study leave as a factor that creates huge vacancies in the teaching profession. He expressed particular concern over the fact that the estimated cost involved in granting study leave amounts to a huge component of the educational budget, and yet a majority of teachers who enjoyed the facility did not return to teaching. These findings speak to issues about recruitment and retention, but more importantly the latter, in view of the fact that about 70 per cent of teachers who complete further training through study leave with pay do not return to teaching (Akyeampong, 2002; Quansah, 2003). Not surprisingly, Akyeampong (2002) called for policies targeting the specific factors that undermine the adequate supply and retention of teachers.

However, the foregoing issues are not nascent in Ghana's teacher education discourse. In an earlier study that examined the teacher education system from a cost and financing perspective, Akyeampong, Furlong and Lewin (2000) performed a rigorous analysis of teacher demand

and supply for basic school for the period 1998–2010. Using such critical variables as the growth rate of school-age cohorts, pupil-teacher ratio, teacher attrition rate and gross enrolment rate, they noted that:

“The output from the training colleges has not been sufficient to replace those leaving primary teaching for one reason or another or to meet the demand created by an increasing school population. Perennial and acute shortage of teachers persists [sic] in rural areas. The Ministry [of Education] has great difficulty getting trained teachers to accept postings to the rural areas which are perceived as economically deprived. When teachers do accept postings they may not stay for long. There are also some indications that qualified teachers are deserting teaching for better paid jobs in the private sector and in NGOs” (p.5).

Akyeampong et al. (2000) were particularly worried about the increasing rate of teacher attrition which, according to them, was related to the status of basic school teaching and the structure of opportunities for career development. They noted that “a considerable volume of resources is currently directed towards the upgrading of qualified primary and JSS teachers through to diploma and graduate status ... [via] full time residential courses which have a direct cost and a teacher replacement cost ... [and which] often lead to those who have upgraded leaving primary and JSS teaching” (p. 21). Contemplating a solution, Akyeampong et al. reasoned that the output of the teacher training colleges needed to be increased if pupil-teacher ratios were to be kept at the current level and the number of untrained teachers in the system was to be decreased. Their suggestion for achieving this goal lay in three policy options: increased resource allocation to the training colleges, improved internal efficiency in the teacher training colleges, and more radical alternatives to teacher training that could increase supply at sustainable cost.

IV-4. Characteristics of teacher entrants, their views on the teaching profession and the quality of teacher training

In an attempt to provide a better context for teacher education as a means of improving the quality of teachers and ensuring their retention in the profession, Akyeampong and Stephens (2002) explored the background characteristics of 400 teacher students at their

point of entry into teacher training. Their study was based on the thesis that the “input characteristics and qualities of the typical beginning student teacher are important indicators of the quality of trained teachers at the point of exit and of their continuing *long-term commitment to the profession*” (p. 262, our emphasis). The entry characteristics explored were prior teaching experience, reasons for choosing to teach and socio-economic background.

Many of the students (74 per cent) had no formal classroom teaching experience prior to entering training. However, they had less formal or unstructured teaching experience that they saw as “equally valuable in terms of the professional capital they bring to college” and as providing “contexts within which a hitherto buried interest in teaching had been awakened” (p. 268). Reasons stated by the students for choosing to train as a teacher were generally altruistic (e.g., the desire to impart knowledge, or an interest in working with children) and extrinsic (e.g., job security and social mobility). The social mobility factor — that is, the opportunity teaching offered either to find a higher status job outside teaching or a high-status position in the education sector — also emerged as the student teachers’ future aspiration. Akyeampong and Stephen (2002) argued, rightly, that such motives and aspiration are influenced by the current study leave policy which allowed teachers to further their professional education as full-time students while at the same time receiving full salary. The authors also cautioned that the matter of student teachers seeing basic school teaching as unattractive, and aspiring to become secondary teachers after their university education, was an omen of a gloomy future for basic education and, therefore, required “an urgent policy response” (p. 273).

Regarding socio-economic background (using education level and occupation of parents as variables), the study found that most beginning student teachers were relatively better off. Two implications of this background for retention were noted by Akyeampong and Stephens (2002:265):

“First, the differentials in home backgrounds between student teachers and the communities in which they are likely to teach might make some unwilling to accept or unprepared

for teaching positions in the deprived communities in which the majority of school-going Ghanaian children reside... The second likely consequence of the home background characteristics relates to the effect that the beginning students’ sense of self, shaped by aspirations nurtured by their family background, has on their commitment to the teaching profession.”

There appears to be legitimate grounds for expressing the above apprehension in view of the fact that the problem of trained teachers refusing posting to deprived communities and the general lack of interest in teaching (especially basic school teaching) as a long-term career in Ghana has been documented in earlier studies (Bame, 1991; Casely-Hayford, 2000; Hedges, 2000).

In another study, Akyeampong and Lewin (2002) administered a questionnaire to 400 beginning student teachers and 300 final year teacher-trainees selected from four teacher training colleges in the southern part of Ghana, and 134 newly qualified teachers who had taught for two years in basic schools in the Central Region of the country. The focus of the study was to explore the perceptions of the participants about the status of teachers and teaching, and to assess their preferences for posting. Final year student teachers and newly qualified teachers did not regard teaching as “the best job I can get”; neither did they consider themselves “fortunate to be (training as) a teacher”. Also, they agreed with the statement “I would rather get a higher qualification and do a different job than remain in teaching”, but disagreed that “teachers of today have more respect than in years before”.

Comparing these with positive responses by beginning student teachers, Akyeampong and Lewin (2002) concluded that “positive attitudes to teaching deteriorate as trainees pass from BSTs to FSTs and become NQTs”. They explained their argument as follows:

“It may be that as students acquire more exposure to the realities of teaching in primary schools they become less idealistic, and for some this encourages a lessening of commitment to teaching and a weakness in their beliefs about the status of the profession they are entering... It may be that the training programme does not expose student

teachers sufficiently to the realities of teaching in ways that help them to maintain high levels of motivation. It may also be that problems with unsuitable accommodation, challenges of working in deprived communities, and conflicts with community members over poor pupil performance, begin to undermine motivation and commitment... So also may peer comparison with colleagues who did not go into teacher training and who may appear to have more attractive occupational features” (pp. 343–344).

The above explanation seems plausible and, indeed, echoes the findings of previous studies (Akyeampong, Ampiah et al., 2000; Akyeampong and Stephen, 2000; Hedges, 2000). But the conclusion might lack tenacity in view of the fact that the study was cross-sectional rather than longitudinal. Notwithstanding, it draws attention, once again, to the unattractiveness of basic school teaching resulting from its low status and poor public image, and the readiness of entrants to quit it at the first opportunity. This is strengthened by the other findings of the study. Newly qualified teachers preferred to attend university over teacher training college, with over 80 per cent expressing a strong desire to go on to further studies in the university within 5 years of teaching. The authors interpreted this as an indication of the NQTs’ eagerness to apply for study leave with pay after teaching for three years, and exit basic school teaching. Finally, across the three groups of respondents, teaching in primary schools in rural areas was not a first choice.

As part of the MUSTER research project, Akyeampong (2001) examined the issue of teacher quality in Ghana by exploring pre-service initial teacher training for changes that might be needed to improve the quality and supply of teachers for basic schools. The design used was a three-stage research framework: inputs (examining the characteristics of those who enter teacher training), process (what they experience in training and its value to them) and outputs (what appears to be the quality of training outcomes). Samples for the studies were drawn from four training institutions located mainly in the southern parts of the country. Questionnaires were administered to three teacher groups: those in their first year of teacher training, those in the final year, and newly qualified teachers (in their first year of teaching). Interviews also were conducted to explore particular perceptions, values

and attitudes toward issues about teacher training. Short autobiographies were written by beginning student teachers to give some understanding of their earlier experiences with schooling and teachers. Classroom observation in training colleges was undertaken, and college tutors were interviewed for their perspectives on what went on during their lessons.

The study found that beginning student teachers have weak qualifying grades in two fundamental school subjects (Mathematics and English); a waiting period of 2–5 years prior to entering teachers’ colleges; and apparently sharp differentials in their socio-economic background compared with typical Ghanaian communities. Beginning student teachers also come with rich and varied images of teachers, teaching and the profession, but the content of the training programme does not seem to effect much change in the perceptions and predispositions that the trainees bring to college. Student teachers also expressed little desire to teach at the basic school level, mainly for reasons of status and insufficient fringe benefits. Finally, the transmission model of curriculum delivery still dominated classroom interaction.

The evidence suggested that Ghana needs to seriously rethink its teacher training policies if the projected goals of basic education quality are to be met. Traditional practices are grossly insufficient to meet the challenges of producing the quantity and quality of teachers needed to deal with the changes expected in basic schooling in twenty-first century Ghana. Cumulatively, the evidence gathered points to the need to take a serious view of the methods of teacher recruitment, incentives to make teaching attractive (especially at the primary level), and putting greater emphasis on continuing professional development programmes provided through structured institutionalized In-Service Training for Teachers INSET and a mandatory internship programme for beginning teachers.

In a related study, Lewin (2005) sought to understand whether pre-service teacher training meets its objectives, and ways in which it could be improved. He found that teaching entrants come from family backgrounds that constrain the cultural and academic capital they bring with them to the training experience. Also, trainees often have a well-developed image of good primary teachers, which

typically focuses on the personal and affective aspects of the role rather than the methods of effective teaching and learning of content. Teacher educators surprisingly often have little detailed knowledge of the characteristics of the cohorts of students they train or of the school environments that the newly trained teachers enter.

Hedges (2002) conducted an exploratory study into the process of becoming a basic school teacher in Ghana, using qualitative methods. His interviews with newly qualified teachers (NQTs) and education officers revealed that when NQTs chose the regions for their first posting, many of them chose urban areas, and that many of those who were posted to rural schools managed to get a transfer after the first few months, using health as a reason. The study also highlighted delays in the payment of salaries to newly posted teachers as a result of red-tape and administrative bottlenecks.

Together, the studies on teachers and their profession indicate that teaching at the basic school level has never been a preference for most teachers in Ghana. Whatever the motivation for choosing to teach, many who teach at the basic school do so with the long-term view of moving upward to secondary teaching or any higher position on the education ladder, or outward to other occupations. These vertical and horizontal movements are typical of teachers who obtain degree qualifications after initial teaching in basic schools. The factors that tend to pull teachers out of basic school teaching are the poor public perception of teachers at that level and the socio-economically deprived communities in which most of them work. These factors work in concert with the perceived low salaries and status of teachers and their profession generally.

V. NATIONAL INITIATIVES TO IMPROVE THE QUALITY OF EDUCATION

A number of initiatives have been taken by the Ministry of Education, in most cases in collaboration with its development partners, to improve educational quality in Ghana. These initiatives are in many senses “innovations” in the context of Ghana, though some may be established practices elsewhere. Our use of “innovation” here carries

the connotation not only of something newly introduced but also of a change in the way of doing things with a view to bringing about improvements, or solving or alleviating some perceived problem.

V-1. Quality Improvement in Primary Schools programme

One major initiative is the Quality Improvement in Primary Schools (QUIPS) programme, begun in 1997. It was a USAID-supported multilevel programme of assistance to help improve schooling effectiveness that ran from 1997 to 2004 with the aim of supporting the Government of Ghana’s continuing reform, known as Free Compulsory Universal Basic Education (FCUBE). The essence of the QUIPS strategy was to demonstrate the conditions required for effective and sustainable primary education, and to replicate the successful elements in a national Model Schools Programme.

The QUIPS model dealt simultaneously with policy reform and with school and community development, emphasizing the following objectives:

1. improving the quality of teaching and learning;
2. building capacity for decentralized school management;
3. increasing community involvement in schools; and
4. improving the physical learning environment.

The QUIPS programme worked in collaboration with the Ministry of Education, Ghana Education Service, district officials and community representatives to improve the effectiveness of the primary education system. QUIPS supported intervention at three levels:

1. school level — training of teachers, school heads, circuit supervisors and other district officers;
2. community level — awareness creation and mobilization of support for strengthening School Management Committees (SMCs) and Parent-Teacher Associations (PTAs); and
3. district level — improving management capacity through training in planning, budgeting and financial administration. (This intervention provided grants to the district education offices.)

Each year, 75 new schools and communities were selected to participate in the programme, with each school receiving 2 years of intervention as described above. In 2004, when USAID withdrew its assistance and handed over the project to Ghana, over 400 partnership schools and communities in all the 10 administrative/educational regions of the country (and 96 districts out of 110), covering about 112,000 primary school pupils, had benefited from the QUIPS interventions.

A final evaluation of the USAID/Ghana QUIPS programme was carried out to, among other things, assess the impact of the QUIPS Programme on pupil learning and to identify factors associated with improved pupil learning and challenges that need to be addressed in programmes to improve pupil achievement. The countywide evaluation collected qualitative data in a sample of 16 representative districts as well as at the national level. Quantitative data from the project and results of the post-intervention pupil testing were analysed. Structured interviews with a wide range of stakeholders solicited information about factors that support, enhance and consolidate child learning. The content of documents generated by the programme was also analysed.

Some of the conclusions related to pupils, schools, communities and districts were:

- Many children started the school day hungry and tired, thus undermining their ability to learn.
- Pupils cannot be expected to make appreciable gains within a two-year intervention period in the absence of accelerated programmes in literacy and numeracy.
- QUIPS-fostered community involvement in school management has had a lasting impact on the quality of education and resultant learning.
- Education reforms targeting improvements in teacher instructional practices that fail to address systemic issues related to teaching (recruitment, training, remuneration, conditions of service) cannot be sustained.
- The positive impact of effective head teachers on learning was clear in high-performing schools both for schools that received QUIPS assistance and for “control” schools.
- The high mobility of teachers and district personnel trained by QUIPS undermined the long-term

effectiveness of in-service training for teachers.

- While QUIPS in-service training exposed teachers to a variety of specific child-centred instructional and classroom management strategies, few of these were observed in practice during the final evaluation.
- An absence of teaching aids (especially textbooks and supplementary reading materials) continued to be a serious impediment to effective learning among children at all grade levels.
- High teacher absenteeism continued to undermine pupil learning in spite of QUIPS interventions.

The QUIPS evaluation team recommended that:

1. A reassessment should be undertaken to ensure that coverage in fact addresses areas in need to ensure that children’s learning is not jeopardized by malnutrition.
2. Future education reform activities should include modules for parents and communities on the importance of feeding to child learning, including activities to help parents prioritize their spending to allow for support of their children’s education.
3. Investment in the SMCs/PTAs by government and its development partners should be continued through the District Assemblies as well as the GES. (Integrated planning and budgeting in financially viable assemblies has funded and made use of the technical expertise of District Education Offices to implement innovations in primary schools as well as the initiatives from SMCs/PTAs.)
4. As decentralization proceeds in Ghana, the capacity of both District Assemblies and District Education Offices to manage change and finances will grow; this is an area that should receive increasingly emphasis in new education development programmes.

V-2. Performance monitoring and school performance appraisal

The Performance Monitoring Test (PMT) and School Performance Appraisal Meetings (SPAM) were introduced in 1998. The PMT is a test in English and Mathematics that is administered to 25–50 per cent of pupils in public primary schools. For the English test, a 55 per cent score is set as the satisfactory performance standard (SPS), while for Mathematics the SPS is set at 50 per cent. The results of the test are discussed at SPAM, where parents and other

stakeholders in education have the opportunity to analyse the performance of their children and devise strategies for improving their performance.

A study conducted in the first year of the programme revealed that the national mean scores in the English Test were just 20.95 per cent for Grade 1 and 34.18 per cent for Grade 6. The corresponding scores in Mathematics were 39.56 per cent for Grade 1 and 13.94 per cent for Grade 6. In the English Tests, only 12.92 per cent of pupils in Grade 1 attained the satisfactory performance standard, compared with 21.84 per cent who attained SPS in Grade 6. In the Mathematics Tests, 42.89 per cent of Grade 1 pupils attained SPS compared with 2.77 per cent of Grade 6 pupils attaining SPS.

The study further revealed that girls performed better than boys in the English Tests, whilst in the Mathematics Tests boys did better than girls. Significant disparities also were found in the performance of urban and rural schools, with urban schools performing better in both the English and Mathematics Tests.

The study identified the reasons for the low achievement levels of public primary schools as including inadequate textbooks, inadequate stationery, poor staffing, ineffective supervision, absenteeism among teachers and pupils, and poor community participation in education. Despite these shortcomings, there were strong indications that SPAM was having some positive impact on the attitudes of both teachers and communities towards the education of the Ghanaian child.

V-3. Fee-free school feeding programme and bus system

It has been realized that personal costs for schooling prevent many children from accessing and completing basic education, even when school fees are small, due to family poverty. Since the 2005/2006 academic year, the government has abolished the payment of fees in basic schools. Instead, a capitation grant has been introduced, by which money covering fees with respect to pupils enrolled in a school is paid by the government to the schools. This relieves the burden on parents and encourages more pupils to enrol in school. In addition, there is a school

feeding programme by which pupils in basic schools are to be provided one free meal a day. The bus system enables basic school pupils to travel in government commercial buses to school without paying.

With the exception of the capitation grant, the other two interventions have not reached all schools, especially rural schools. However, records indicate that enrolments in schools increased by 14 per cent in 2006 (WGHE, 2004). Similar interventions resulted in 11 per cent enrolment in Lesotho in 2001 and 68 per cent in Uganda in 1998. However, this necessitates the recruitment of more qualified teachers, provision of teaching-learning materials, expansion in school infrastructure, and efficient management of resources. It also demands that measures be put in place to avoid “fees creep” even though officially and legally fees have been abolished.

V-4. Girl-child education promotion initiative

To increase the enrolment of girls in schools and thus minimize the gap between enrolments of boys and girls, the Ministry of Education has established a Girl-Child Education Unit for the Ghana Education Service (GES). The unit is specifically tasked with reducing the dropout rate of girls from 30 per cent to 20 per cent in the primary schools, and from 27 per cent to 15 per cent in the junior secondary schools.

With respect to this core mandate, the unit has chalked up considerable success. For example, in 1990/1991 girls' enrolment at the primary level was 45 per cent, but this increased to 47 per cent in 2000/2001. At the junior secondary level, girls' enrolment went up from 41 per cent to 45 per cent during the same period.

The Girl-Child Education Unit also awards scholarships to needy but brilliant girls to continue their education at the senior secondary level and beyond. The scholarship programme, which was begun in 2001 by the GES, is funded by the Ghana Education Trust Fund. The unit also liaises with non-governmental organizations (NGOs) and girl-education advocacy groups, a number of which have formed Girls' Clubs throughout the country.

In 2002, a study reported by Esi Sutherland Addy and sponsored by UNICEF-Ghana was conducted to assess the impact of the Girls Education Programme in Ghana. The specific purpose of the study was to review the aggregate impact of goal setting and practical activities in the area of girls' education, and to deduce emerging trends for the purpose of supporting policy review of this important area. The study reviewed research papers, projects and evaluation reports; statistically analysed trends in the situation of girls' education; and carried out a survey featuring selected site visits of initiatives in girls' education, interviews and focus group discussions with actors and beneficiaries.

The study found that although most of the interventions in the area of girls' education are being undertaken by a number of NGOs and development partners, the operational records of these organizations have not been systematically consolidated. The study also noted that the overall rate of improvement in the situation of girls' education is very slow. More importantly, the study observed that support for girls' education had reached a stage where many current externally funded programmes were coming to an end, and the prospects for continued or increased direct support were tentative. This highlights the need to strategically plan to sustain the programme.

V-5. Science, Technology and Mathematics Education clinics

Science, Technology and Mathematics Education (STME) clinics for girls have been instituted to redress the gender disparity and misconceptions about girls' participation in science, technology and mathematics education. The clinics seek to promote the interest of girls in STME and also enable them to interact with women scientists and technologists. The clinics have been decentralized to the district level.

In March 2000, the governments of Ghana and Japan — through the GES and Japan International Cooperation Agency (JICA), respectively — initiated a Science, Technology and Mathematics (STM) project. The main aim of the GES-JICA STM Project was to improve the teaching and learning of science and mathematics at upper primary and JSS levels within the project areas (Adansi West

District, Akuapem North District and Tamale District). To achieve its objectives, the GES-JICA STM Project set out to improve the capacity of basic school teachers in both content and methodology in science and mathematics as a way of equipping teachers with the necessary skills for effective delivery of science and mathematics lessons for upper primary and JSS pupils in the three project districts. The ultimate goal of the project was to enhance basic school science and mathematics teachers' instructional competence so that it impacts significantly on pupils' achievement, starting with the project districts. This project took five years to complete.

The final evaluation of the project was conducted in 2004 by the Teacher Education Division of the GES, JICA and the Institute of Education, University of Cape Coast. The evaluation study focused on the impact of INSET activities organized for teachers and the subsequent impact on pupils' achievements in science and mathematics. The target group consisted of all STM-trained teachers, all head teachers and circuit supervisors in the three districts as well as science and mathematics tutors of the three Teacher Training Colleges involved in the project. Data also were collected from nine upper primary schools and nine JSS in Akuapem North District, and six upper primary schools and six JSS in each of the other districts (Adansi West District and Tamale Districts). Questionnaires, interviews, tests and observation schedules were designed and employed in the survey to collect both qualitative and quantitative evidence.

The key findings of this final evaluation survey showed that the GES-JICA STM Project had tremendous impact on upper primary and JSS teachers who participated in the STM INSET. Findings of the survey further showed considerable improvement in lesson notes preparation, lesson presentation and development, and the use of teaching and learning materials. To a large extent, therefore, the project was found to have achieved its purpose of improving the capacity of STM/INSET-trained teachers for delivering STM in the three project areas. Also, the short-term goal of the GES-JICA STM Project — improving the educational achievement of pupils at upper primary and JSS in science and mathematics — was achieved in science for upper primary pupils and in mathematics for JSS pupils.

The study made the following recommendations:

- (a) To sustain the impact of the STM project, districts should be adequately resourced in terms of funding and human resources, so as to enable them to support continuous structured INSET at both district and school levels.
- (b) To implement child-centred and activity-oriented learning in the schools, schools could introduce subject teaching for science and mathematics, particularly in upper primary school, to reduce workload of teachers.
- (c) To continue with the use of teaching and learning materials, schools need science and mathematics kit boxes to be supplied by the MOE (to both primary schools and JSS), which should be replenished from time to time.
- (d) The University of Cape Coast and the University of Education, Winneba, must be encouraged to lend support to the facilitation of INSET for basic school teachers due to their expertise in the training of basic school teachers.

V-6. Ensuring gender equity through syllabus development

The GES has introduced a policy whereby all curriculum materials and activities are carefully designed to avoid any gender biases in the classroom and the school system. As an example, all specific learning objectives begin with “the pupil will be able to...” in order to give equal attention to both genders. Similarly, sexist words such as “chairman” and “mankind,” which were found in most textbooks, are being replaced with “chairperson” and “humankind.” Teachers are also encouraged to avoid learning activities that tend to emphasize the dominance of males over females.

V-7. Decentralization and community participation

Management of schools has been decentralized, with much room given to communities and district assemblies to participate in managing schools. District assemblies now have the responsibility to build, equip and maintain schools under their areas of jurisdiction. Each district has established a District Education Fund for this purpose.

Within the framework of educational decentralization, District Teacher Support Teams (DTSTs) have been formed to provide an anchor for improving the quality of teaching and learning at the district level. These DTSTs provide support to schools in the area of good practices in literacy, numeracy, leadership and problem-solving.

V-8. District Sponsorship of Teacher Trainees

The District Sponsorship of Teacher Trainees was introduced by the MOE/GES in the 2000/2001 academic year to address the problem of a shortage of teachers, particularly in rural and other disadvantaged communities; to ensure equitable distribution of teachers across the country; and to enable districts to respond quickly to teacher demand in their schools (TED, 2000). The scheme encourages districts to sponsor candidates, especially those from rural areas in the district, for training in the Initial Teacher Training Colleges (ITTCs) so that, on completion of their courses, the newly qualified teachers are posted to the sponsoring districts to teach for at least three years. It is believed that candidates sponsored by, and from, the district would not only accept posting to “their” districts but also stay longer, since as natives they would already be used to conditions there. There is a further assumption that teachers with a rural background understand the realities of rural life and are likely to stay for a reasonable period of time. The policy document provides the districts broad guidelines with regard to eligibility, application process and incentive package to enable them administer the scheme.

The scheme is tied to the process of admission to teacher training colleges. In other words, candidates applying for admission to teacher training colleges must first seek sponsorship from a district by which they enter into a contract to return and work for the agreed number of years. As evidence that such a contract has been entered into, the GES requires the District Director of Education to endorse the candidate’s application as an indication of the district’s acceptance to sponsor them. Regardless of the incentive package a particular district offers its candidates, the Central Government (through MOE/GES) still pays a maintenance allowance for teacher trainees to cover boarding and lodging as well as basic textbooks (TED,

2000). In all public educational institutions in Ghana, students do not pay for tuition.

In order to better understand how the district sponsorship scheme was implemented, and how it worked as an incentive to attract and retain teachers, Cobbold (2006a) conducted a qualitative study in one district. He analysed the policy document, interviewed the District Education Officers, and had focus group discussions with 12 of 18 teachers who were the first to benefit from the scheme in the district to ascertain their perceptions of, and responses to, whatever incentives were embedded in, the scheme.

The study found that:

- The district did not go beyond the three-year minimum period of in-district service suggested in the national policy (the same timeframe within which many basic school teachers take advantage of study leave with pay to pursue further studies, and after that withdraw from basic school teaching or the profession).
- The process of selecting applicants for sponsorship did not include investigation of an applicant's orientation to rural teaching.
- The sponsorship package the district offered during the 2000/2001 academic year for the 3-year course was an insignificant financial incentive (the equivalent of US\$100 (using the 2004 exchange rate of the Ghanaian cedi to the US dollar) per trainee versus the government allowance of US\$2,154). This appeared to have had very little influence on the candidates' decisions to enter teaching; rather, it was the allowance paid by government that provided the inducement to train as a teacher.
- All the sponsored teachers expected to leave the district after three years (the period of the contract) to pursue university education and then either exit teaching or move to secondary teaching. Thus, if the career decisions of the sponsored teachers are used as a proxy for their retention, then the scheme's impact appears to be insignificant; all of them intended to leave the district within five years for further studies, and only few planned to return to teaching after obtaining degree qualifications.

Based on the above findings, and drawing insights from the implementation of similar "grow your own" schemes around the world (e.g., in the USA, Australia, New Zealand

and UK), Cobbold (2006a) concluded that the "attracting" and "retaining" power of the district sponsorship scheme was weak, and needed to be strengthened. Accordingly, he made the following policy recommendations:

- Districts should select candidates who not only hail from the area but who also have an intrinsic interest in working in rural schools in the district.
- Districts should include in their policy a provision that requires sponsored candidates to do their one-year practicum in the communities and schools where they would work, and should make adequate financial and material provision for this.
- Districts must put in place structures (such as further sponsorship and staff development opportunities) that would enable sponsored teachers to upgrade their qualifications and update their knowledge and skills later in their career while maintaining their loyalty to the district beyond the contracted period.
- Districts need to source funds from voluntary non-governmental organizations and charity groups to enable them to offer more enticing financial incentives.
- The scheme should not be tied to the general admission requirements; that is, it should not require all teacher training college applicants to seek sponsorship from a district. Otherwise, the scheme violates the principle of voluntary response implied in inducements, and thus begins to lose its persuasive power.

V-9. Extended school experience and practice teaching in teacher education

In the recent past, the Ghanaian educational authorities and the public have expressed concern over teachers' lack of competence in teaching methodology, and the over-emphasis on theory versus practice in the teacher education curriculum. The notion that learning to teach occurs effectively in real classrooms, rather than the lecture rooms of training institutions, also is gradually gaining ground in the teacher education system. As a result of these developments, teacher education institutions are being required to extend the period of their practicum to afford teacher trainees more experience in actual classroom teaching, and thereby develop their practical pedagogical skills.

In the teacher training colleges, the 3-year programme is dubbed IN-IN-OUT. Trainees spend the first two years in college to do academic and professional studies, and spend the last year teaching in schools under the mentorship of experienced teachers. The University of Education, Winneba (UEW), has a similar structure for its undergraduate programmes. The Faculty of Education, University of Cape Coast (UCC), is currently redesigning its 4-year undergraduate programmes to allow for one full semester of school-based practice teaching instead of the current four weeks of off-campus teaching practice.

V-10. Education sector response to HIV/AIDS

Ghana, like other African countries, appreciates the magnitude of the HIV/AIDS problem. From the basic to the tertiary levels of school, HIV/AIDS is incorporated in the curriculum. At the basic level, it is taught in various subjects (for example, in Social Studies and Integrated Science).

In the teacher training colleges, HIV/AIDS has been introduced as a new subject. The University of Cape Coast has HIV/AIDS education as a required course taken by every student. In addition, lecturers are enjoined to address HIV/AIDS issues in their respective subjects as and when such issues become relevant.

V-11. The Ghana Education Trust Fund

The Ghana Education Trust Fund is a fund into which 2.5 per cent of the Value-Added Tax is paid. It is applied to the education sector to supplement government budgetary allocation. From the basic to the tertiary level, institutions continue to benefit from the fund through infrastructural development and scholarship for staff development.

V-12. Diversification of educational funding

Since the inception of university education in Ghana, the government has taken full sponsorship of all students, including boarding, lodging and a stipend. The concept of cost-sharing between government, students and the private sector has been accepted by a large majority of the populace. Students now make contributions towards the use of academic and residential facilities. A good number

of students also seek accommodation in private hostels.

A related development is the introduction of sponsored fee-paying. By this, 5 per cent of the student population in a public university admitted each year may pay fees for their education if they satisfy the minimum admission requirements but fail to meet the cut-off points for the programmes of their choice. This has yielded considerable revenue to the universities, and it is fast becoming a reliable regular alternative source of financing tertiary education (WGHE, 2004).

V-13. ICT as tools for teaching and learning

The use of information and communication technologies as tools for teaching and learning is being encouraged at all levels of education, and is a major emphasis in the reforms that started in 2007. It has not been well established at the pre-university levels, but universities are offering ICT programmes; some of them provide e-mail and Internet services to students, though this is sometimes hampered by power-cuts and load shedding. African Virtual University (AVU) sites have been established on the campuses of leading universities (e.g., University of Cape Coast and University of Ghana) with the capacity for exchanges between universities in Ghana and counterparts overseas.

V-14. Changes in governance and management structures

The President of the Republic of Ghana is no longer (and cannot be) the Chancellor of a public university. The position is now held by people who have distinguished themselves in various areas of life. They are appointed by the governing councils of the respective institutions, rather than by the government. Also, Vice-Chancellors, who before were appointed by government, are under the 1992 Constitution of the Republic of Ghana appointed by the University Councils.

VI. POLICY RECOMMENDATIONS

Issues of discrepancies in the achievement of pupils in urban areas and rural communities still exist in Ghanaian schools, despite the introduction of QUIPS and other interventions. This may be due to a one-size-fits-all model of education. The model needs to be diversified in order to adapt to different learners. In particular, there is need for a rural education policy that will cater for the particular needs of rural children. Similarly, teacher training should have a rural education component to prepare teachers who would be willing to work in rural schools. This would not only help to solve the problem of a teacher shortage in such schools but also improve the quality of education in rural settings.

Among the factors that might explain the perceived low professional and social status of teaching, which teachers often cite as a reason for leaving the profession, is the lack of professional standards to guide the work of teachers. Teacher associations in Ghana need to work together to secure a legal monopoly for their occupation through state licensing. They also need to demonstrate high-quality practice that meets quality assurance and accountability standards, and define who enters the profession and stays in it, through the articulation of clearly defined professional standards that jointly improve the quality of teaching and student learning.

The development of professional teaching standards has loomed high on the professionalization agenda in the USA, UK and Australia. We caution, however, that such standards should not be imposed by government, to be used as regulatory frameworks and for maintaining bureaucratic controls over teachers. Rather, the development and content must be owned and mobilized by the profession itself, grounded in a body of professional knowledge that has been developed by teachers.

The incorporation of HIV/AIDS education in the curriculum of schools is a step in the right direction. However, school-based programmes can only provide a partial response to the problem, as they do not reach out-of-school youth. So we must move beyond this towards constructing programmes for out-of-school young people. The formation of youth clubs, as found in Kenya, Uganda,

Swaziland and Cameroon (Rispel, 2006), is one way of doing this. Such clubs could focus on HIV/AIDS education as well as recreational and income generating activities. Existing structures in communities, such as virgins' clubs, could be used.

The move in Ghana to decentralize educational management to the district level provides a viable option to ensure efficiency and effectiveness. We recommend that the "faire-faire" (making things happen) strategy used in Senegal to implement literacy programmes be studied and adapted in Ghana. That strategy is based on a partnership between government and civil society, managed by a balanced, functional distribution of roles and responsibilities and consensus-based tools and mechanisms for managing the implementation of policy (ADEA, 2005). The approach is based on a series of strategies whose actual implementation serves as a guarantee of the system's performance.

As part of measures to strengthen the pedagogical competence of teachers and also retain teachers in the profession, we propose that the first two years of teaching be made an induction period during which the new teacher is accorded provisional registration status. This has been suggested by many education committees and previous studies; its implementation should be considered as a matter of urgency. Generally, the induction period is a time to encourage and help initiate an entrant to the profession, establish and maintain professional standards, and develop practical teaching proficiency.

The induction programme should include a system of profiling new teachers based on careful coordination between schools and the training institutions, have written guidelines for the programme, and emphasize contact with and involvement in all aspects of school life and teaching tasks (Cobbold, 2006b). It also must have thorough assessment practices to help the new teacher progress during the induction period itself, with participation and successful progress used as requirements for certified and tenured status. There is strong evidence that in countries such as USA, UK and Australia, where induction and mentoring have become part of teacher education policy, teacher expertise, professional development, job satisfaction and retention continue to improve.

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Mozambique team

Innovation in Teacher Training in Sub-Saharan Africa

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I. INTRODUCTION

Sub-Saharan Africa (SSA) appears to be one of the least developed regions in the world. Poverty continues to rise, along with its consequences: hunger, pandemics (such as HIV/AIDS and malaria), illiteracy, uncontrolled population growth, a deteriorating environment and a low standard of living. This paper is based on the view that one of the fundamental causes of under-development in Africa is the region's inability to endow itself with an effective system of education designed to develop human resources with a capacity to ensure development at both national and regional levels.

The majority of SSA societies may be labelled as transitional societies, shifting from single-party systems to democracy and socially responsible market economies. They require an adequate education system that addresses not only the acquisition of specific knowledge and skills but also the development of actual skills and attitudes favourable to an open democratic society.

In many SSA countries, progress has been made in many aspects of education, including the expansion of access. A report on Education in Sub-Saharan Africa (UNESCO, 2006) shows clearly that Sub-Saharan Africa is not a homogenous region in terms of educational achievements. The historical and socio-economic dynamics of each region (e.g., West, Central, Eastern and Southern Africa) contribute to disparities in terms of the capacity to achieve the Education For All (EFA) goals among and within regions. The Central and West African regions, for example, are far from achieving the EFA objectives. The education pyramid of these two regions also shows a lack of balanced school coverage at all levels of education and an inability of the education systems to allow sustainable transition rates from one level to another. Many countries are seen as under-exploiting their fiscal potentials and giving insufficient priority to education, although some of them are well endowed with natural resources (UNESCO, 2006).

In other regions of SSA, like Southern Africa, some countries already have achieved universal primary coverage, and primary completion is almost universal. A

relatively balanced coverage at all levels, including higher education, is underway. The leading countries in this regard are South Africa, Botswana and Namibia.

Eastern Africa, including the Indian Ocean insular countries, is the more heterogeneous region in terms of education achievements. Some countries, including Mauritius, Zimbabwe and Kenya, have reached Primary Completion Rates of 100 per cent. Others, however, including Djibouti, Burundi, Rwanda and Mozambique, have primary completion rates of below 50 per cent (UNESCO, 2006).

II. THE NEED FOR INNOVATION IN TEACHER EDUCATION

An important challenge facing education in SSA is that of quality. Quality is measured against stated institutions' goals and objectives; it is defined in terms of fitness for purpose — i.e., whether the education provided is of good or poor quality depends on the degree to which it addresses the stated ideals, goals and objectives (purpose) (MESCT, 2004).

“A quality and relevant education should be able to prepare future generations to improve everyone's conditions of living and to teach to each individual to have a critical vision on major problems of his/her country's current problems: poverty, diseases, war, environmental destruction, etc.”
(<http://www.tc.edu/PeaceEd/docs/PEwestfrica.pdf>)

Quality education and the improvement of completion rates depend on the quality of teacher training programmes. Recruiting teachers and training them to provide them with adequate profiles to fulfil well their functions and obtain social recognition and status are important actions towards quality assurance. When the ministries of education met at the 32nd General Conference of UNESCO, they reaffirmed in the Final Communiqué that:

“We find indispensable the role of teachers as purveyors of knowledge and values and as community leaders responsible for the future of our young. We should do everything in our power to support them and to learn from them” (UNESCO, 2003).

The teaching force of many SSA countries is composed of teachers of different entry qualifications who have joined the profession through multiple routes.

The main objective of this paper is to depict the context within which innovation for revitalization of education for sustainable development in SSA, and in Mozambique in particular, is pursued. It discusses the potential of emerging success stories in teacher training that really address the education problems in the continent.

Teachers' education is expected to play a pivotal role in fostering sustainability. The expectation of society is that educational institutions should improve practices and contribute to reducing poverty.

The teacher's role should not be one of a transmitter of knowledge but that of a mediator in the construction of knowledge. This may enable teachers to become agents for fostering the development of social skills and creating a learning environment that will encourage young people to live together and to become responsible citizens. The right balance between preserving national identity and entering the global economy demands a skilfully designed curriculum with strong emphasis on democracy and multiculturalism (UNESCO-IICBA, 2007; <http://www.ten-iicba.org/>).

Educational institutions and the system as a whole, like other organizations, require constant monitoring to identify areas for potential improvement. However, educational reforms often are not well implemented. There is a clear need for innovation to address the African educational problems, and poverty reduction in particular. The ultimate goal of the changes in the innovation and revitalization process should be to improve the outcomes through an alteration of practices, or to revitalize and share good practices. The process of change, however, is complex; there are a number of strategies for implementing these changes that have been tried with a various degrees of success (e.g., Credaro, 2001). In this paper, we present a few success stories from selected SSA countries, and an outline of the Japanese leading role model in teacher education.

The macroeconomic importance of investing in teachers' training and salaries in general is highlighted by ActionAid (2007), which argues that public investment in health and education contributes to building a better educated and healthier workforce, and that spending on teachers and doctors is an investment rather than consumption (Credaro, 2001).

The need for improving practices in order to foster the quality of education has been advocated at different levels, including at the continental level. The need for innovation has been clearly stressed in several symposia in Africa, due to the similarity in the problems faced by SSA countries. It is useful to distinguish three categories of teacher education: initial training (pre-service) for inexperienced teachers, often immediately after they have left school; initial training (in-service) for experienced but unqualified teachers, often done on the job; and continuing (lifelong) education for teachers after their initial training (Dladla and Moon, 2002).

III. TEACHER TRAINING STRATEGY IN SSA

The role of teacher training institutions in achieving quality in education for all according to the World Education Forum held in Dakar in 2000 is characterized as follows:

- The need to produce adequate numbers of well-trained teachers and to provide adequate training to those who are not qualified.
- The need to develop and implement skills upgrading, in service and lifelong teacher training programmes, including ICT-based open and distance learning.
- Taking into account the huge number of teachers to be trained and the limited capacity of existing teacher training institutions, the need to use open and distance learning (ODL).

The above-mentioned goals are supposed to be achieved by a better use of ODL, which proved to be successful in countries such as South Africa, Nigeria, Tanzania and Ethiopia. ODL can reach rural and remote areas. Countries like Ethiopia have adopted ODL as an important vehicle particularly for delivering in-service upgrading and up-

dating the training of all categories of teachers (IICBA, 2003).

Some of the comparative advantages of ODL lie in:

- avoiding the opportunity cost of taking people out of their normal employment for training;
- reaching large a number of individuals;
- raising educational standards through the use of high-quality materials; and
- achieving better cost-effectiveness and greater efficient than traditional college campus-based educational systems.

The above-listed goals of the Dakar Declaration concerning teacher training show clearly the need for innovation in order to foster quality education for sustainable development in Sub-Saharan Africa (e.g., Mahenge, 2005; Mda, 2005).

There still remains, however, a great deal of intellectual effort to be made in order to achieve the goals of Education for All in Africa. The World Education Forum in Dakar in 2000 indicated the three ingredients of quality education that could lead to sustainable development:

- a curriculum that builds upon the knowledge and experience of teachers and learners,
- participatory governance, and
- effective management.

In SSA in general, the main challenge in teacher training is how to significantly expand the size of the teaching force while improving quality, and still maintain costs within reasonable limits in order to attain EFA goals. Teachers need strong institutional support, adequate remuneration, and effective access to information and opportunities for their broader professional development that will enable them to address the challenges of sustainable development.

For education to foster development, entrepreneurship training should start as early as primary school, continue throughout the education lifecycle, and extend into lifelong learning. Intangible assets (the human and intellectual capacity) are outstripping traditional tangible assets (e.g., land, labour and capital) as drivers of growth (Pathack, 2003). The knowledge economy that is emerging in the

twenty-first century is about converting knowledge into profit — that is, developing actionable (innovative ideas) to solve real world problems, including the ability to respond rapidly to changes in markets, prices and technologies (Leach and Moon, 2002).

The relevance of innovative education should be based on the transfer of emphasis from the mastery of knowledge to innovative application in a productive capacity (Leach and Moon, 2003; Torres, 1996). Education also should be anticipatory, rather than seeking remedies; in other words, today's education should aim at tomorrow.

The solution to the problem, it is argued, lies in encouraging a deeper involvement on the part of universities and teacher training institutions of SSA, especially by taking advantage of their capacity for innovation (O-Saki, 2005). This is because teacher training alone is not a panacea for the lack of quality education in Africa. In a study commissioned by UNICEF, for example (Torres, 1996), it was found that in different parts of the world, primary education programmes that operate with under-qualified and para-professional staff often are showing equal or even better student results than those operating with professional, certified teachers

IV. EDUCATION PROBLEMS IN MOZAMBIQUE

Mozambique, for instance, has in the last 32 years changed from a colonial society into an independent nation. It has experimented with different models of societal organization, and interacted in that context with the field of tension created by the conflict between global superpowers whose roles have since changed. It has lived through a protracted period of civil war that deprived millions of people of life or livelihood and destroyed large parts of its economic and social infrastructure, including what it had carefully built after independence to provide learning opportunities for its young people. Government estimates indicate that between 1983 and 1992, over 3,500 primary schools were destroyed or closed down; this represents 58 per cent of the school network. The Mozambican economy is dominated by agriculture, which employs about 80 per cent of the population and contributes 33 per cent of the

country's GDP (Government of Mozambique 2005; MEC, 2005; Niquice, 2002).

To the challenges facing education for sustainable development in Mozambique, an additional stressor is emerging: the HIV pandemic, which compromises the teaching performance as the rates of infection keep increasing (MEC, 2005).

Although statistics show that spending on education is rising in Mozambique, it is not clear if this spending reflects improvement in the quality of education or whether it only expands the school network and general access. This is because, in the specific historical context of Mozambique where schools were damaged during the war, there is a notorious spending in building and rehabilitating schools all over the country. A similar situation is found in countries like Sierra Leone, where many schools were destroyed by wars (Action Aid, 2007).

Table 1. The challenges of education for sustainable development in Mozambique, and the need for innovation in education practices and policies

Challenge or problem	Description
Lack of professional teachers and financial constraints	Shortening of the length of training programmes; increasing number of "volunteer teachers"; low salaries; reproduction cycle; low ability at entry level; poor public image and status of the teaching profession
Historical political legacies	Several changes in education system structure and syllabuses; constant adaptation to new contents and strategies; concentration on building and rehabilitating infrastructures rather than on increasing quality
Rural/urban inequalities	Reluctance of trained teacher to go to remote areas and districts
Teacher:pupil ratio	Poor performance; sometimes, two different grades in same classroom
HIV pandemic	Exacerbating the lack of professional teachers, decreasing their performance when sick

Table 2. The impact of wage ceilings in Malawi, Mozambique and Sierra Leone

	Malawi	Mozambique	Sierra Leone
Current number of teachers (female:male%)	45,268	47,193 (31% f, 69% m)	18,038 (32% f, 68% m)
Current pupil:teacher ratio	72:1	74:1	57:1
Number of untrained teachers	0	38%	40%
Number of teachers required to achieve UPC by 2015 at PTR 40:1 (including rates of attrition)	90,477	109,172	28,895
Ceiling on public sector wage bill (as % of GDP)	7.0%	7.5%	6.1%
Teacher wage bill as % of 2007 GDP	2.7	2.7	4.5
% of wage bill going to teachers salaries	37%	35%	35%

Source: ActionAid, 2007:20

Another constraining issue is the teacher/pupil ratio. Generally, teachers in Mozambique have to deal with a large number of pupils in mixed-ability classrooms. The salary is low, and often reaches the teacher late. Although the output of training colleges is rising, well-qualified teachers, principally those with higher education degrees, are reluctant to leave the towns to teach in rural areas. Women teachers who already are married in towns are reluctant to leave their families to go to rural areas.

IV-1. The situation of teacher training in Mozambique

Some studies show that there is a great tendency of having more qualified teachers in urban than rural areas. Lauchande et al. (1999), for instance, found that academic qualifications and teaching experience are higher in Maputo than elsewhere. In some districts away from Maputo, more than 1/3 of teachers lack professional training. In those areas where the repetition rate is higher, teachers and even head of schools have only basic training (6+1) in teaching methods (Lauchande et al., 1998).

Results published by MEC in 2004 corroborate the findings of Lauchande and his colleagues and show evidence that

the percentage of teachers with more teaching experience is higher in Maputo than elsewhere. This situation is different from rural schools. In such provinces as Gaza, Inhambane and Cabo Delgado, the percentage of non-trained teachers in PG2 is higher compared with other provinces (see table 3). In PG1 there are more untrained teachers than those who received training in teaching methods.

In the current situation, most teacher training models are generally ineffective and produce teachers at a pace that lags behind the continuously growing demand, exacerbated by the impact of the HIV pandemic. Ideas and philosophies of education inherited from the colonial past and the historical vicissitudes of post-independence development also still impact considerably on teacher training strategies in most SSA countries; Mozambique is no exception. This paper hereafter describes some innovation projects carried out in Mozambique: the Crescer project and the Ajuda de Desenvolvimento de Povo para Povo (ADPP) project. The ADPP model of teacher training, which is closely linked to other development and livelihood enhancement projects, is widely implemented in countries like Angola, Malawi and Guinea-Bissau (Humana People to People, 2006).

Box 1: Tanzania

ACCELERATED TEACHER TRAINING

About ten years after independence, Tanzania decided to move towards universal primary education, almost doubling the number of children in school. The government estimated that it needed an extra 40,000 teachers. As the existing training colleges were producing only 5,000 new teachers a year, it was decided to recruit secondary school leavers and train them on an apprenticeship model, partly on the job and partly through distance education. Over a period of three years, they were posted in schools where they had a reduced teaching load. They then followed correspondence courses backed by radio programmes; they were supervised and tested on their classroom practices, and passed their examinations. Two evaluations found that they ended up reasonably competent in the classroom (Chale, 1993; quoted by Perranton, 2000).

Box 2: Ethiopia

POST-GRADUATE DIPLOMA IN DISTANCE EDUCATION

In cooperation with the Indira Gandhi National Open University (IGNOU) of India, study programmes leading to a Post-Graduate Diploma in Distance Education (PGDDE) and to a Master of Arts in Distance Education (MADE) are underway. Among other countries, Ethiopia has been a success story. IGNOU is a national accredited institution in India with the responsibility of coordinating open learning and determining standards. Some of the questions investigated in PGDDE are: What happens in Ethiopian classrooms? How can classroom activities be improved? (IICBA, 2003).

V. SUCCESS STORIES IN TEACHER TRAINING IN SSA

This section deals with notable successes in challenging the problems of both the quantity and the quality of teachers. The availability of human resources and the richness of accumulated knowledge, experience and expertise is important. The necessary link is increasingly provided worldwide by international agencies such as UNESCO. Some aspects of the teaching profession in Japan, in particular, are presented in this section for the purpose of contributing to further reflection on teacher training in SSA. These success stories, gathered through documentary analysis (including information from the Internet), summarize more complex processes.

V-1. The teacher development management system in Uganda

In order to promote continuous and accelerated improvement in pupils' learning as the basis to achieve primary education reform in Uganda, a programme called the Teacher Development Management System (TDMS) was designed. This programme was impelled

by a consensus reached among decision-makers in the government on the need for a massive and systematic reform to improve the quality, access, equity, efficiency and relevance of primary education. The quality of teacher education was pointed to as a top priority issue in the government plans. The TDMS strategy focused on training untrained teachers as well as training head teachers in school management (and other subjects).

The components of the programme included:

- providing management training for all levels of education managers (aimed at strengthening the management capacity of education institutions);
- revising and improving of syllabus of Primary Teacher Education and the Diploma in Teacher Education, and producing instructional modules;
- offering refresher courses to teachers to enable them to handle the new curriculum and examination demands;
- constructing and equipping Primary Teachers' Colleges and Coordinating Centres; and
- providing Coordinating Centre tutors for observation, follow-up and support to teachers and head-teachers in order to directly reinforce the knowledge and skills learned.

Table 3. Teachers with and without pedagogical training in public schools by province and sex, EP1, 2004

Province	Total		Total Mozambicans		With training		% with training		Without training		% without training	
	M	MF	M	MF	M	MF	M	MF	M	MF	M	MF
C. Delgado	465	3392	465	3392	255	1812	54.8	53.4	210	1580	45.2	46.6
Gaza	2050	4169	2050	4169	968	1788	47.2	42.9	1082	2361	52.8	57.1
Inhambane	1694	4079	1693	4076	916	1963	54.1	48.2	777	2113	45.9	51.8
Manica	747	3693	746	3682	299	1298	40.1	35.3	447	2384	59.9	64.7
Maputo	1779	3463	1778	3459	1264	2299	71.1	66.5	514	1160	28.9	33.7
Nampula	1361	7311	1361	7310	764	4082	56.1	56.8	597	3228	43.9	44.2
Niassa	840	4641	840	3641	384	1676	45.7	46.0	456	1965	54.3	54.0
Sofala	866	3260	865	3258	635	2304	73.4	70.7	230	954	26.6	29.3
Tete	1212	4201	1212	4201	800	2211	66.0	52.6	412	1990	34.0	47.4
Zambézia	1317	6706	1312	6700	829	4081	63.2	60.9	483	2619	36.8	39.1
M. City	1677	2721	1676	2720	1592	2559	95.0	94.1	84	161	5.0	5.9
Total	14008	46636	13998	46608	8706	25073	62.2	55.9	5292	20535	37.8	44.1

Source: MEC (2005).

Management of the programme — This programme was headed by the National Primary Education Reform Management Committee, comprising working groups who carry out specialized work such as Tutor Training, Primary Teacher Education Curriculum Task Force, Management Training, Community Mobilization, Refresher Courses and Construction. The secretariat of the programme was located in the Project Implementation Unit, at the Ministry of Education and Sports. The implementation of the programme started in 1993, and it was progressively extended to 45 districts across the country and involved in-service training. Before the programme was established, more than 40 per cent of teachers were untrained.

Success of the approach — Table 4 shows the number of untrained teachers and teachers trained through the TDMS programme from 1993 to 2002. As can be seen, 107,009 teachers were progressively trained using this approach, which confirms the success of the programme. A study conducted by Moes (2000), quoted by Hartwell et al. (2003), stresses the importance of teacher education in Uganda as the principal means for providing both pre-service and in-service teacher training. This programme reached a large number of schools, centres and tutors of about 23 Primary Teacher Colleges nationwide. Also, it has been seen as “the only avenue for reaching teachers, schools and communities on-site with a decentralized network of in-service teacher education, professional guidance and school level support” (Hartwell et al., 2003).

Concerning classroom practice and pupil learning, Hartwell and his colleagues found that teachers who participated in the programme had developed basic teaching skills. Writing lesson plans, writing schemes of work, and displaying instructional aids are among the skills developed through this programme.

According to Hartwell et al. (2003:2), the maintenance of the programme was endangered by (i) a shortage of institutional and financing resources and (ii) a tension that developed between the Department of Teacher Development and the Education Standards Agency over their approaches towards improving education quality, budgeting and resource allocation. These problems need an urgent solution.

V-2. Success stories in Mozambique

In the development of the Strategic Plan for Education, the main objectives of the educational system in Mozambique are increasing educational access, improving quality and developing an institutional capacity to sustain the future educational system. To implement this plan, the Ministry of Education and Culture is counting on its ability to establish and reinforce cooperative linkages with various stakeholders of the educational system (such as parents, communities, employers, NGOs, other government sectors, religious institutions, etc.) who will all be called upon to play a role in the provision financing and management (Ministry of Education and Culture, 2005). The funding of school construction and higher education capacity building is partially assured by World Bank loans. Joint funding involving UNICEF and other donor organizations is also practiced.

V-3. The “Crescer” project

Supporting pedagogical activities of untrained (and even trained) teachers to improve the quality of teaching has been one of the main concerns of the Ministry of Education and Culture. Along with the regular training that takes place in teacher colleges, various other programmes are being run to support teaching and to enable teachers to gain professional teaching skills. The Crescer project was designed and implemented by the Ministry of Education in response to concerns about the demand for quality in teaching, mostly for those who teach in district remote areas. “Crescer” provides systematic, continuous, experimental, and reflexive training; it is school-based, in-service training that aims at updating teaching methods and skills. Crescer is supported by the idea that the continuous development of teaching skills can effectively achieve quality teaching if training is incorporated into the daily school routine as well as into the learning and teaching process (MEC, 2005:6).

Crescer is a programme that values training at school because it believes that teachers can have more opportunities to apply immediately what they have learned during the training sessions. Teachers constantly participate and directly implement learned teaching contents and strategies in a continuous feeding process

of theory and practice. It seems to be an innovative and creative way of keeping teachers highly motivated for their work.

Crescer is a school-based programme and includes schools that belong to the same district area, called a Pedagogical Influence Zone (PIZ). A PIZ is a congregation of a certain number of schools located in the same district area; it is led by a representative who is in charge of regulating pedagogic processes of the schools belonging to the same area. Teachers of the PIZ meet regularly to discuss pedagogical issues related to teaching strategies and the learning process, such as teaching materials and methods. Teachers in the same PIZ also participate in training sessions as well as monitor the implementation of the project itself. Local education authorities at the district level also support the implementation of the programme.

The implementation of the Crescer programme at school and PIZ level follows seven main components that serve as a guide for teachers' activities during training. It is important to note that the programme of a particular training session is run continuously with no interruption. Training takes place once a semester, during lesson break time. This process allows teachers to simultaneously learn about teaching methods or strategies and other training related activities while remaining on duty.

The components of the project include such contents as planning lessons and other teaching activities, group discussion, participation in training sessions, analysing classroom activities in light of the Crescer programme, preparing instruments and collecting data. Each participant receives a number of credits for his/her participation in the programme.

Table 4. Number of trained and untrained teachers between 1993–2002

	1993	1995	1996	1997	1998	2000	2001	2002
Trained	47316	53518	59747	62574	80953	86238	97722	107009
Untrained	31833	20883	21817	26673	18264	24128	29316	32475
Total	79149	74401	81564	89247	99237	110366	127038	139484

Table 5. Components of the Crescer programmes

Components	Objectives
MDST Meetings to Discuss in-Service Training	Review and plan in-service training activities
TM Teachers Meetings	<ul style="list-style-type: none"> • Discuss training contents • Prepare teaching materials • Plan lessons using new strategies acquired during training • Analyse portfolios
MISTS Monitoring of the Impact of in-Service Training at School	Determine impact of Crescer project in classroom activities.
ISTPS In-Service Training PIZ Sessions	Invite all PIZ teachers to participate in training sessions
ISTA In-Service Training Activities	Plan parallel activities
CIST Credits of In-Service Training	Determine credits

Source: MEC 2005

One of the important aspects that can be stressed in this programme is that the teachers are constantly engaged in routine activities directly related to the teaching process and improve their skills by discussing, sharing and applying what they have learned in training sessions.

MDST activities take place at the beginning of each semester. Teachers in the meeting discuss the extent to which objectives stated in previous activities were achieved. Further constraints are identified, and new training and teaching activities for the incoming semester are planned. MDST meetings include all teachers at school level as well as the school leadership (principal, administrative and pedagogical).

TM activities are group meetings that take place at school level. Teachers are organized in small groups that meet regularly to discuss the contents of training modules, lesson planning, design of teaching materials and portfolio analysis

MISTS is a monitoring activity carried out by a PIZ coordinator or district educational representative. The PIZ coordinator visits schools in his/her PIZ area and evaluates the impact of the project in the classroom setting. ISTPS are training sessions at PIZ level that take place once a semester, during lesson break time. The sessions include debates, group discussion, preparation of teaching materials, portfolios and feedback reflection. Each participant gets two credits.

ISTA is related to activities other than training that can be viewed as part of individual development. Such activities consist of acquiring knowledge on transversal aspects such as HIV/AIDS, bilingual education, local curriculum and so on. ISTA meetings or seminars are organized by district or provincial educational authorities even at national level.

All in-service training activities are registered in a book in the school, and each participant gets a number of credits to certify his or her professional teaching abilities.

In parallel with training sessions, the Crescer project also has developed textbooks for different areas to help participants develop their skills. Such modules are, on the one hand, related to teaching methodologies and, on the

other hand, to other school environmental aspects such as school management, curriculum concept, development of instructional objectives and a learner-centred approach. Such aspects seem to be innovative and straightforward; they aim at improving teachers' capacity to look at school as an integrated system. Indeed, in addition to teaching duties the teacher is seen as a manager in a broader sense since he or she also is in charge of the management of people (teachers), the classroom and the school infrastructure

V-4. The structure supporting the implementation of the Crescer project

The structure that supports the implementation of the project is set up from school, PIZ, district, provincial and national levels. There is, somehow, an interconnection among the different team members. At the school level, the person in charge of the implementation of the programme is the headmaster of the school, assisted by his deputy. The team also includes a representative of the group of teachers who leads the discussion and debate in the group. A PIZ has only one representative who coordinates training and pedagogical activities. At the district and province level, the supporting teams include one member from each discipline.

At the national level, the structure includes a National Supporting Team, the National Executive Group, the General Inspector and his deputy.

The Crescer project helps teachers to improve their performance without having to travel to the capital cities or regional centres to attend traditional theoretical seminars and workshops in the form of lectures delivered by experts.

V-5. The ADPP project in Mozambique

The ADPP project is an example of innovative teacher training for primary education in rural areas. The philosophy underpinning the ADPP programmes emphasizes learning as a proactive process that allows people and communities to adjust to new circumstances and to be prepared for change (Humana People to People, 2006). The approach addresses the broad range of learning needs in a relatively comprehensive and integrated

approach that challenges the creative imagination and political will; it works across sectoral boundaries. This approach is based on the observed mismatch between the traditional school content and the need for self-employment. ADPP-TTC programmes involve broader livelihood aspects, including farming practices, health behaviours and community leadership. ADPP projects and approaches are multisectoral and empowering. They are based on learning without frontiers (Humana People to People, 2006).

Livelihood orientation and employment creation are the main focus of the ADPP effort. In a country like Mozambique, where only 17 per cent of the labour force is engaged in wage employment, the vast majority of people live on subsistence agriculture or are self-employed in a fast-growing informal sector in urban and peri-urban areas. The ADPP courses seek to address the development of skills in agricultural production, marketing and a variety of self employment strategies, such as individual and collective co-operatives and small business. This raises the problem of teacher's low salaries.

For example, the programme devotes 1/2 of the teaching time to academic studies organized in subjects. The teaching method used is based on problem-solving; students are expected to work and solve the tasks. Another 1/4 of the programme deals with debates around exciting and challenging questions aimed at promoting the trainee's ability to make deliberations. The remaining 1/4 of the time is devoted to experiences. The trainees are asked to apply the acquired knowledge in community work and organization of events at school level. It appears that the ADPP programme trains teachers as community developers and leaders (Humana People to People, 2006).

The main criticism about ADPP is that it overemphasizes community development rather than the academic training needed for further education. Another criticism is that the programme, in fact, focuses on training teachers for rural and peri-urban areas in a country with rapid urbanization in certain parts.

The structure and the content of the course reflect the need for learning as a preparation for life. In the courses, the teachers obtain the knowledge and skills they will use in

their real lives. The ADPP training colleges are boarding schools.

VI. CONCLUDING REMARKS AND RECOMMENDATIONS

The accumulated experiences in the international arena show that relevant and sustainable teacher training is achievable. However, one of the constraints is how to achieve the critical mass of teachers using the innovative approaches discussed above versus traditional ones (and the existence of a large number of non-qualified teachers). In Mozambique and other African countries, this situation is attenuated by the existence of innovations like Crescer and ADPP, which help to professionalize the teachers. The Crescer project, a successful in-service programme run by the Ministry of Education and Culture in Mozambique, trains teachers in their environment and allows teachers to interact with others to improve their performance. An evaluation of the implementation of the programme in the province of Gaza, conducted by Alipio, Niquice, Perez and Chirime (2007), showed that teachers who took part in the Crescer project had significantly improved their teaching performance.

Some SSA countries are reported to have made advances in improving the quality of education. For example, Botswana, Egypt, Ethiopia, Kenya, Mali, Mauritius, Namibia, Senegal, South Africa, Tanzania, Uganda and Zimbabwe are reported to have managed to expand access and improve the quality through better teacher training, targeting the poorest performing schools (*Education Today*, 2005). The use of local languages in the teaching of science is also reported in Tanzania and Ethiopia.

When, in the community, teachers are the solution and not the problem, they are expected to become more motivated, which may improve the prestige of the profession. In a context of declining job opportunities, becoming a teacher is the only access to formal employment in rural areas, principally for the most disadvantaged households who cannot afford to finance further learning for their children.

An adequate balance within the education system is needed (UNESCO, 2006). The share of technical and

vocational education within secondary education should be improved in order to solve the problem of underutilization of natural resources and to create an enabling environment within the communities for technological innovation. The coverage of higher education should be expanded, and the relevance of the courses should be improved to foster technological innovation.

The ability to cooperate towards education for sustainable education in Africa must be strengthened. Universities can play a crucial role in fostering research so that best practices could be produced and shared. There is a need for Africa-based innovative approaches to teacher training to establish a better balance between academic and professional learning.

Teacher education, especially when it is provided by universities and involves classroom research, has a multiplier effect in fostering the revitalization and innovation of education in SSA. The Pedagogical University of Mozambique, for example, in cooperation with other universities of SSA, can contribute to promoting innovation and revitalization based on Africa's own experience (e.g., O-Saki, 2005).

ODL is an emerging area of interest at the Pedagogical University (PU). The World Bank loans to Mozambique in the area of higher education, including the Africa Virtual University Programme, are boosting the capacity of PU to undertake ODL.

The university has the capacity to establish links with other African institutions in order to carry out joint research projects. The Innovation Centre at the Pedagogical University can contribute to shaping the structure and philosophy of the teaching programmes by seeking the ideal balance between the academic, professional and community development aspects needed for sustainable development and poverty reduction.

The content to be taught in teacher training and general education schools should include an adequate balance between global, national and local perspectives, and it should focus on the typical problems to be solved by the teachers in the working environment. The working environment, the quality of the facilities and the socio-cultural background of the pupils are intimately linked with the general problem of poverty alleviation, the lack of formal employment and the need for promoting entrepreneur skills.

Box 3: Japan

THE JAPANESE EXAMPLE

Once a teaching licence is awarded to a person with the right profile to work as a teacher in Japan he/she is guaranteed a life-long position. However teachers are not left without further training; they are provided with a parallel lifelong training programme. First-year teachers, for example, receive substantial assistance and guidance from senior teachers. Teacher induction in Japan facilitates collegiality. All newly appointed full-time teachers also receive 20 to 30 days of intensive kenshu (training) and shido (guidance) from master teachers at prefectural education centres and overnight retreats. These programmes give new teachers opportunities to form lifelong friendships and significant collegial bonds with peers. Prefectural education centres provide additional professional development at 5, 10 and 20 years of service to further enhance ongoing in-service training. The notion of the teacher as a lifelong learner is an integral part of Japanese educational philosophy.

Japanese teachers spend less time teaching students in classrooms and considerably more time outside classrooms on other tasks. The average number of weekly classroom teaching hours is mandated at 16 for high-school teachers, 21 for junior high school teachers and 30 hours for elementary school teachers. However, most teachers spend long hours from dawn till nightfall at school. During summer vacations, teachers are expected to continue coaching and other duties, including supervising students on excursions. The job description of a teacher includes coach, leader, mentor, counsellor and friend.

Extracted from "Contextual Issues on Teacher Education: A Comparative Study between Japan and Egypt"; paper submitted to Distance Education and Teacher Training in Africa, 5–8 August, Makerere University, Kampala.

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A Strategic Paper

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This strategic document submits recommendations for innovating educational programmes, pedagogy, teaching methods, teaching tools and technology in Sub-Saharan Africa. The recommendations of major international conferences on education held in various parts of the world, and in Africa in particular, have been taken into consideration for this purpose.

On the whole, from the International Education Conference of Addis Ababa in 1961 until the World Education Forum of Dakar in 2000, countries in Sub-Saharan Africa undertook many reforms of their education systems. They also signed many sub-regional, regional and international framework agreements to reform their education systems. While these reforms have generally led to positive results, in terms of enrolment and retention, efforts still need to be made in some countries that have not yet attained the goals of universal primary education.

Since the International Education Conference of Jomtien in 1990 and the Dakar Forum in 2000, new challenges (relating mainly to quality) have emerged. The overall quality of education systems can be viewed from three major perspectives: (1) access for all individuals to lifelong quality education, (2) the relevance and values of education, and (3) personal fulfilment as well as the social, economic and cultural development of communities.

Like elsewhere in the world, globalization — especially of the economy — and the rapid expansion of information and communication technologies are creating new challenges (and new opportunities) for education systems in Sub-Saharan Africa. The challenges of improving the standard of learning, achieving the general goals of quality and facing the international competition that currently prevails in the education sector all call for significant reforms. These reforms involve every aspect of education: educational policies, education financing, the recruitment and training of teachers, major innovations to adapt educational programmes and teaching methods, better use of material resources and technologies, and wider access to textbooks and teaching manuals.

Considered as a whole, and through a global and strategic approach, the required reforms must aim mainly at

improving the results and impact of education systems on the harmonious fulfilment of individuals as well as on the development of communities. The realities of the job market, and of professional integration, also must be taken into account.

These innovations may consist of strengthening the actions and programmes already under way in some countries, or adopting new orientations.

I. EDUCATIONAL PROGRAMMES OR CURRICULA

I-1. From programmes (or broad fields of education) to curricula

Current research on education places strong emphasis on adopting an approach focused on curricula rather than on standard school programmes. In general, in the practices observed, school programmes traditionally are composed of lists of the contents to be taught. A curriculum, on the other hand, is a structured set of knowledge, know-how, inter-personal skills, values and orientations specific to a given environment and level of education, with the whole being defined and constructed methodically to achieve a set of fixed goals.

In view of the above, countries in Sub-Saharan Africa are invited to adopt the curriculum approach and explore the possibilities offered by the competency-based approach

I-2. Indigenous programmes

Whatever the political and philosophical foundations may be, the primary purpose of education is to prepare individuals to live in society. Education forms them by inculcating the fundamental values of their living environment (local society) and of humanity in general. In this respect, African education systems should mould Africans, root them firmly in their values and encourage them to take an open outlook on the rest of the world.

Learners, therefore, should acquire inter-cultural skills from early childhood. They must be taught to understand their own world as well as the interacting environments

and populations. They must gradually acquire a solid knowledge of all the broad groups and fields of education that serve as the cultural foundation for societies and human groups in Sub-Saharan Africa, and of the large natural regions of the continent.

The countries of Sub-Saharan Africa must explicitly incorporate into their education systems programmes on social and environmental studies that are founded on African cultures, while also being open to the outside world. Emphasis should be placed on acquiring intercultural skills.

I-3. Requirements for lifelong quality education

Education not only prepares individuals to live harmoniously in society; it also equips them to solve problems arising in the milieu in which they live (or will live). In learning how to solve the problems (of development) currently affecting Sub-Saharan Africa, or those that will emerge in the medium term, education systems will be confronted by a double constraint. The first constraint is related to the rapid evolution of knowledge, while the second has to do with globalization. African education systems will have to adopt flexible curricula that can be adjusted, as necessary, to future needs in order to respond to this dual constraint.

Sub-Saharan African countries must adopt and widely disseminate flexible educational programmes of a scientific nature — programmes that are designed to cope with the major disasters suffered by the continent, such as desertification, famine, pandemics, lack of drinking water and hygiene. The preponderance of literary studies over scientific studies, which can still be observed in many countries, will have to be reversed gradually. Priority must be given to ensuring that the largest number of learners possible will acquire a good knowledge of scientific disciplines and methods.

I-4. Skills indispensable for personal fulfilment

Education should lead to personal fulfilment and prepare individuals to integrate into the social and economic fabric of their living environment. To achieve these objectives, educational programmes should be evaluated regularly, with a view to adapting them to the needs and expectations of individuals and communities.

Every country in Sub-Saharan Africa should establish a reliable system for managing and evaluating its education system. The observatories set up in each of these countries will use indicators that facilitate comparisons between the skills acquired by learners at school. Countries in Sub-Saharan Africa also should establish a joint observatory to monitor their education systems. The principal indicators of this overall African education observatory would be established according to the same methodology.

Languages in education — The mediocre results of numerous education systems in Sub-Saharan Africa are due, in part, to language issues. The fact is that in many African countries, the language of instruction frequently is a foreign language taught as if it were the mother tongue of the learner. This approach must be rectified by exploring or reinforcing the possibilities of teaching in a national language. Since children are receptive to multiple languages from a very young age, African education systems should endeavour to promote multilingualism.

Along with the introduction of national languages, countries in Sub-Saharan Africa should develop a bilingual approach in their education systems so as to facilitate regional communication on the continent. Special attention should be paid to ensuring that all learners will acquire a good knowledge of two of the major languages used for international communication.

The teaching of science and technology — Science and technology are playing a growing role in the lives of individuals and nations. An increasing number of practices and objects of daily use are founded or created on the basis of scientific skills and know-how, according to technological processes that can be repeated.

Training the mind and encouraging an aptitude for science must be started at the youngest age possible, through appropriate activities. It then should continue during all the years of study, through ever-more complex activities aimed at reaching an international level of competency.

The teaching of science and technology should be reinforced in terms of quality. It must be accompanied, at a very early stage, by a more realistic interaction between theory and practice. One of the constant concerns of education should be to demonstrate the applications of science in everyday life. The theoretical teaching of rules, laws, theorems and the fundamental principles of science should be dropped in favour of an approach founded on observations and experiments carried out by the learners.

In view of the fact that the world is evolving towards more complex science and technology, countries in Sub-Saharan Africa should introduce appropriate programmes and resources to familiarize learners with an inquiry-based approach to science at a very young age. Through this means, the continent gradually could be integrated into the world of technological and scientific discoveries.

II. SPECIFIC PROGRAMMES

II-1. Prevention of armed conflicts

Armed conflicts are a major challenge facing the continent. But armed conflicts are not inevitable; they can be prevented by educational action, such as through programmes of general psychology centred on studying local, sub-regional and regional mentalities. Educational programmes on the prevention of armed conflicts will also concentrate on education about peace and citizenship, mutual understanding and tolerance, human rights, and dialogue among cultures.

The main goal of these programmes would be to teach the notions of democracy and co-operation. They would be conducted in a subtle manner, and adapted to the education of very young children through activities within the reach of the age group. They would continue during primary school and into the first years of secondary school

through the study of texts and activities of a moral and civic nature. In the last years of secondary school and in higher education institutions, these themes would be treated through philosophical, political and legal documents.

Based on the above perspective, countries in Sub-Saharan Africa are invited to include educational programmes on good citizenship, peace, democracy and human rights throughout the years of study of their education system, with the goals of preventing armed conflicts, developing a dialogue of cultures and fostering mutual understanding among peoples. These programmes could form a common and compulsory core for all years of study, from early childhood care and education to the last years of higher education, without any distinction between specialized disciplines.

II-2. Health education, and the fight against HIV/AIDS and its prevention

Malaria, sickle-cell anaemia, diabetes and AIDS are among the most widespread diseases in Africa. These ailments handicap a large number of learners, either directly or indirectly. Education systems must implement adequate measures to take care of children suffering from or affected by these ailments. It is vital to include good hygiene and the prevention of these ailments in educational programmes.

Bearing this in mind, current practices should be rectified, because health education is often conducted outside of official educational programmes. By way of example, several establishments benefit from projects conducted by the United Nations Population Programme aimed at teaching students the right reflexes in the field of education about population growth. Similarly, many programmes focus on health education and HIV/AIDS prevention. However, such programmes only enter schools through the back door. In many countries, they typically consist of activities undertaken by clubs, under the responsibility of an NGO or association.

Given the numerous experiences already acquired, the countries of Sub-Saharan Africa should include contents

and activities designed to improve public health and hygiene in their official teaching programmes. This includes setting up structures to dispense a high standard of education, in keeping with the state of health, to populations who are capable of attending school or who are enrolled in a school but hospitalized for a long duration. Educational programmes in the field of health and hygiene should place particular emphasis on such major ailments as malaria, diabetes and HIV/AIDS, as well as reproductive health.

II-3. Minorities, displaced persons or refugees, and persons living with a disability

The beneficial effects and advantages of education should not be reserved exclusively for the healthy population. Persons suffering from a disability also have an inalienable right to education; as a universal right, education must be open to those of all social categories.

There are numerous disabilities, of a diverse nature, that can have a negative effect on the schooling of an individual or on access to the education system. Disabilities, be they physical or mental, can take on a social character when they affect minorities or displaced persons. Educational action must be designed in such a way as to reach all categories of the disabled.

Countries of Sub-Saharan Africa should introduce strategies that will ensure inclusive education for displaced persons, those living with a disability, or persons of any social category deprived of education because of cultural, social, economic or other reasons.

II-4. Specific programmes in higher education

Higher education must play a key role in the rapid development of education. Some of its fundamental missions are to foster innovations in education, debates, research on education and dissemination of the findings of pedagogical studies.

In contributing to raising the quality of education, higher education institutions in Sub-Saharan Africa are faced with

two new challenges. The first is economic liberalization and its corollary, the opening of the education sector to competition. African universities, therefore, must be attractive in terms of the programmes they offer and their teaching methods, research strategies and capacity to follow-up on their graduates. The second challenge is to develop international comparisons between universities; to this end, African universities must adopt policies to renovate their teaching systems, research activities, and publications for the purpose of achieving greater international visibility.

In view of the missions of universities regarding both fundamental research and applied research, higher education institutions in Sub-Saharan Africa will have to adopt strategic renovation plans to reinforce their contribution to quality education. Such renovation plans should focus on teacher training and developing research on education. Universities must adopt the kind of strategies that could enable them to cope with the international competition that is dominating the education market. They should endeavour to fulfil the criteria of international comparisons between universities by introducing study programmes, research activities and communications aimed at improving their international visibility.

To achieve this objective, they should adopt a comparative grid specifically designed for African universities — one that would enable them to strengthen their co-operation in the fields of teaching, research, international scientific meetings and publications.

III. PEDAGOGY AND METHODS

III-1. Class size and modes of functioning

The efforts made to develop education in Sub-Saharan Africa since the International Education Conference in Jomtien in 1990 are clearly reflected in the school enrolment rates. Improved access to education has naturally led to increases in the number of pupils and the size of classes. The number of learners per class has risen significantly at all levels of education, whereas the number of teachers is growing more slowly.

Sub-optimum teacher/pupil ratios can have negative consequences on the quality and outcome of education. This new difficulty calls for the adoption of new pedagogical approaches to deal with large and heterogeneous groups.

Parallel to efforts to introduce free primary education aimed at improving the rate of enrolment and retention, and coping with the shortage of teachers and schools, countries in Sub-Saharan Africa should adopt appropriate strategies of in-service training to increase teachers' abilities to handle large and heterogeneous groups.

III-2. Pedagogical methods and approaches

Renovating pedagogical methods is an absolute priority. Teachers still resort frequently to traditional teacher-dominated methods, which place them at the centre of the teaching and learning activity. To correct this shortfall, teachers need to be better trained on how to use an active approach and adopt the kind of methods that place learners directly at the heart of the learning process. In other words, learners must be made the artisans of their own acquisitions.

Teachers, therefore, will need to be rigorously trained in applying the techniques and methods of pedagogical activities that are currently arousing great interest at the international level. These methods and techniques include structured teaching, outcome-oriented pedagogy, an approach based on skills, co-operative learning, collaborative learning, and open-ended and discovery-based instruction.

Improving the quality of education in Sub-Saharan Africa will require teachers who are trained to become genuine educational professionals, capable of using active and stimulating communication techniques that place learners at the centre of teaching, learning and research. Countries in Sub-Saharan Africa, consequently, will have to adopt appropriate recruitment policies and professional training strategies for teachers. Training strategies will be centred on knowledge and professional practices identified by research on education.

IV. TEACHING TOOLS AND TECHNOLOGY

IV-1. Textbooks and teaching aids

The shortage or unavailability of textbooks and teaching aids has negative repercussions on the quality and outcome of education. Despite the efforts many countries have made to set up publishing houses, there are few textbooks available, and the contents of many are irrelevant to current educational programmes. Textbooks published locally also suffer from high production costs, subsequent high retail prices and an absence of distribution networks.

In view of the financial cost of publishing textbooks, countries in Sub-Saharan Africa will have to adopt sub-regional policies for the conception, publishing and distribution of textbooks and teaching aids. They will, therefore, need to pool the resources allocated for the acquisition of textbooks and teaching aids in each country in order to create sub-regional facilities that could benefit from economically significant markets.

IV-2. ICT in Africa

The major challenges facing Sub-Saharan Africa in the area of education concern mainly the rising number of pupils, the inadequate number of teachers and schools, the inadequate level of recruitment and professional training of teachers, and the severe shortage of textbooks. The combined effects of these difficulties could be attenuated by exploring the possibilities offered by information and communication technologies: resources such as computers, the Internet, television, radio and electronic media (such as CDs) as well as mobile phones, etc.

Teaching, basically, is centred on communication and access to information, documents and abundant references that are reliable and available at the right time. If wisely exploited, ICT could make a considerable contribution to solving the current deficits frequently observed in the education sector of Sub-Saharan Africa.

In view of the needs and deficits of the education sector, countries in Sub-Saharan Africa will need to adopt incentive policies, pertinent strategies and a cost-effective

way to place information and communication at the service of renovating and raising the quality of their education systems. Incentive policies should focus, in particular, on customs duties, preferential connection costs and invoicing of telephone communications, electricity connections and consumption, etc.

The relevant strategies and cost-effective measures will aim mainly at capitalizing on the experiences acquired by the projects developed on the continent and elsewhere in the field of educational radio and television, the introduction of computers and computer science in education, distance learning, and self-teaching for learners (as well as for teachers, so that they can boost and update their professional skills).

Conclusion

As we reach the end of the first phase of the United Nations University Project on Innovation Centres, and in the light of the outcomes of the studies conducted by the four participating universities (in Botswana, Senegal, Ghana and Mozambique), three main priorities need to be highlighted in the quest to improve education in Sub-Saharan Africa.

1. Efforts to revitalize education in Sub-Saharan Africa call for adopting a system approach.

Studies clearly show that policies, education programmes and materials, educational research, and teacher training are four parts of the same system. The system, thus, needs to be considered holistically in establishing a consistent national system of education.

Each of the different parts has a retroactive effect on the others, and they are closely interdependent. Pedagogical programmes, for example, cannot be conceived or implemented separately from policies for education development and teacher training, since it is these policies that make it possible to transform intentions and political will into concrete achievements and progress.

A variety of examples help to illustrate how relevant policy decisions can help improve the situation at the country level: early childhood education, abolition of school fees at primary level, elimination of indirect educational cost, free text books, school feeding programmes, efforts to remove barriers that could hinder the active participation of girls and young children affected by the HIV/AIDS pandemics, curriculum reforms, the choice of language as a medium of education, the empowerment of vocational and technical education, the production and distribution of pedagogical documents, the need to rethink policies governing production, the distribution of learning materials and training teachers to use those materials more efficiently, and the use of information and communications technologies.

Policy measures to improve educational access and quality include more closely monitoring school performance; abolishing school fees at the basic level; promoting

the education of girls; increasing interest in science, technology and mathematics; restructuring teacher education and increasing public recognition of the role of teachers; and responding to the HIV/AIDS threat through curricula review.

2. Whatever initiative is taken, a major concern must be how to improve the quality.

This encompasses a range of elements, including the level of student achievement, the qualifications of staff, the standards of faculties and equipment, and the effectiveness of the teaching, planning and administrative processes.

The overall quality contents and strategy must be seen as a continuum that begins with pre-primary education and extends over a lifetime, with the possibility of considering each level of education as an entity or a self-sufficient segment. When leaving each of the different levels, students should show that they have acquired the life skills required to fully develop their potential. Within this context, the contents and strategies are important because they reflect political orientations and the way they are put into practice in the form of educational measures.

To meet the demands for quality, the revitalization of education in Sub-Saharan Africa must take into consideration six major constraints:

- The demand for life-long quality education for all;
- The design of indigenous programmes in line with the local characteristics of the learners;
- The introduction of skills that are indispensable for the personal development of individuals in their environments;
- The language of learning and teaching (a careful balance needs to be made between enabling the use of local languages and the ability to access the global languages of communication through education);
- Reinforcement of the teaching of science and technology, and updating of its methods based on the link between theory and practice;
- The need to prioritize a child-centred pedagogy rather than a teacher-focussed approach, the continuing learning process, the training of teachers, the use of

technological resources, and the interactive relationship between schools and local communities.

3. The capacity for innovation is essential to revitalize education in Sub-Saharan Africa.

This will require the strong participation of universities and higher education teacher development institutions, which must play a key role in fostering research so that best practices can be produced and better shared, while also fighting for an African-based innovative approach to teacher training based on a better balance between academic and professional training.

The content to be taught should include an adequate balance between global, national and local perspectives, and should focus on the typical problems to be solved by teachers in the working environment.

Science education needs special attention. In this domain, innovation should centre mainly on acquiring methods for life-long learning. Learners should be initiated, as early as possible, into scientific methods specific to the constantly evolving fields of knowledge, with an emphasis on scientific methods of investigation, the development of the ability to find, evaluate and explore scientific information, and the development of ability to critically examine and analyse the different phases of scientific investigation and to recognize the close links between science, technology and the environment.

Innovation can help education to be anticipatory and proactive, so that it allows people and communities to adjust to new circumstances and be prepared to change. It is only through the ability to innovate that education in Sub-Saharan Africa can successfully tackle the challenge of reducing the gap separating it from other regions of the world.

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