

## Helpdesk Report: What works in secondary education

Date: 07 February 2013

**Query:** Produce a report focusing on what works in secondary education, with examples from Asia and Africa.

### Content

1. Overview
2. Key paper
3. Quality (focusing on teacher training)
4. Financing the expansion of secondary education
5. Curriculum and assessment
6. Infrastructure
7. Case studies
8. Other useful resources
9. Additional information

### 1. Overview

#### Quality (focusing on teacher training)

This section considers the impact on education outcomes of a quality teaching experience. It discusses topics including the relationship between student performance and teacher characteristics, such as qualifications, teaching experience, and indicators of academic ability or subject-matter knowledge. Challenges to teaching quality include an overemphasis on education studies (or lack of practical experience), methodology distant from classroom realities, weak teaching practice and a tendency for teachers to teach as they were taught

#### Financing the expansion of secondary education

The resources in this section discuss low rates of enrolment of pupils in secondary education; reasons why expansion of secondary education is important and the challenges to financing this expansion. Options identified for financing the expansion of secondary education include increased public financing of secondary education; the development of cost sharing mechanisms; increased private provision and cost saving reforms that reduce costs per pupil and increase efficiency.

#### Curriculum and assessment

The documents in this section include descriptions of a range of curricula in secondary education, their contents, structure and delivery, and descriptions of assessment strategies. The changing requirements of curricula in the context of the rapid expansion of secondary education and the changing needs of the employment sector are discussed. Critiques of current policies and practices are provided and strategies for reform are outlined.

#### Infrastructure

This section considers how the physical school environment has an impact on learning outcomes and overall education experience. Key issues include building design and maintenance, physical environment, overcrowding, Information Computer Technology (ICT) provision and facility provision.

## 2. Key paper

**Verspoor, A. 2008, *At the Crossroads Choices for Secondary Education in Sub-Saharan Africa*. The World Bank**

[http://siteresources.worldbank.org/INTAFRREGTOPEDUCATION/Resources/444659-1210786813450/Secondary\\_Education\\_At\\_the\\_Crossroads.pdf](http://siteresources.worldbank.org/INTAFRREGTOPEDUCATION/Resources/444659-1210786813450/Secondary_Education_At_the_Crossroads.pdf)

This paper addresses issues concerning the education of youth for 12 to 18 years old. It draws on the outcomes of the Secondary Education in Africa (SEIA) initiative. It provides a resource on good practices and potential solutions for developing and sustaining high-quality secondary education systems in African countries. It contains elements of a roadmap for improving the responsiveness of Africa's secondary education systems to the challenges of the 21st century. Its main objective is to facilitate policy dialogue within African countries and between those countries and their development partners.

It found that historically secondary education in Sub-Saharan Africa (SSA) is based on a system that was designed to educate a small number of the elite and argues this must change if a greater proportion of SSA's youth is to be effectively educated and prepared for work and further education. In this environment, linear expansion of existing systems is not an option, especially with the constraints on public resources available for secondary education. Changes in financing and curricula are inevitable, but even more important may be change in the mental models of schooling and governance that dominate African education policy and practice. Often ideology rather than pragmatism determines policy. Fire fighting and politics rather than development and capacity building too often determine education policy. Although it is now changing, previously secondary education had generally been neglected in education policy and practice. What are needed are secondary education plans that are integrated with longer term national plans for education development.

Virtually all SSA countries need to address the triple challenge of expanding access, improving quality, and ensuring equity. As a result of differences in history, culture, and policy choices, the state of secondary education varies dramatically across the continent. Across SSA the main challenges for secondary education are:

- Enrolment and completion rates are low, with less than one in two youths enter junior secondary school and less than one in four enters senior secondary school.
- Access remains inequitable. Urban populations with more resources have better access to secondary schools. Many poor rural communities have inadequate access. Girls are at a particular disadvantage. The cost of school is often a barrier and where scholarships exist, they are often poorly targeted.
- Curricula are often outdated and have not been adapted to incorporate the need for new life skills and labour market demands.
- Student performance is poor in terms of learning achievements. Many students fail to acquire basic skills and knowledge.
- Finance is lacking – public funds are inadequate to pay for the increased demand for schooling. The per student cost of secondary education is three to six times that of primary schooling.
- Teacher salaries. Often teacher salaries are so low that they are forced to seek other work or change professions. In some cases the government cannot afford to employ all the teachers they train.
- Ineffective use of resources.

- Private funding. More than 13 percent of secondary students in SSA are enrolled in private, for-profit or non-profit institutions.
- The private cost of public schooling—comprising tuition and boarding fees, contributions to school management committees, as well as costs such as textbooks, learning materials, school supplies, transportation, and clothing—is often significant.

Four important lessons from countries that have already made the transformation from elitist secondary education to a mass system are:

- 1) The balanced development of different subsectors of the education system is a bottom-up process; broad access to primary education of acceptable quality must be in place for successful development of secondary education.
- 2) How resources are spent is as important as the amount of resources available.
- 3) Government direction and leadership are important to accelerate and sustain progress and ensure equity; yet decentralisation and local autonomy hold considerable promise, especially in the early stages.
- 4) Public-private partnerships are essential to mobilise the necessary resources, nurture community support, and ensure that secondary education responds effectively to the expectations of local communities and national leaders.

However, the following may need to happen before secondary education is successful in SSA:

- Universal primary education and improved learning outcomes.
- Economic growth.
- Fall in birth rates from current levels (which are high).

### **Teacher quality**

Most research has examined the relationship between student performance and teacher characteristics, such as qualifications, teaching experience, and indicators of academic ability or subject-matter knowledge. Such research generally finds a positive relationship between these teacher characteristics and student performance, but perhaps to a lesser extent than may have been expected. Many important aspects of teacher quality are not captured by the commonly used indicators. The teacher characteristics that are harder to measure, but that can be vital to student learning, include the ability to convey ideas in clear and convincing ways, to create effective learning environments for different types of students, to foster productive teacher-student relationships, to be enthusiastic and creative, and to work effectively with colleagues and parents. The broad consensus is that teacher quality is the single most important school variable influencing student achievement.

It is important that teachers be educated to a higher level than the level at which they are teaching. Each level of education above, that also improves quality, but to a smaller extent the evidence suggests that better-educated teachers achieve better results. Ideally, it may be desirable to have an all university educated secondary teaching force, but, in the medium term, most African countries will be unable to find and finance sufficient teachers with university degrees, especially in a context of increasing secondary enrolment. Rapidly growing systems may end up with a few highly qualified, high-cost teachers, many untrained teachers, and increasing class sizes. The alternative of constraining enrolment growth is rarely feasible. Countries may, therefore, need to plan to use teachers with lower formal qualifications, particularly at the junior secondary level. Whatever qualifications are required, they must be realistic and affordable, and the consequences of less than optimal staffing patterns must be clearly recognised. Failure to take into account the quality of teachers actually employed can lead to unrealistic expectations in curricula, and it tends to reduce the perceived need for in-service supports for teachers.

Two predominant models of secondary teacher preparation have evolved: concurrent and consecutive. The concurrent model involves a course with academic subject knowledge

combined with educational and professional studies throughout the course duration. In the consecutive model, students first get qualifications in the subjects that they wish to teach, and then undertake a shorter teacher training course.

Challenges to teaching quality include:

- Overemphasis on education studies (lack of practical experience)
- Methodology distant from classroom realities
- Weak teaching practice
- Tendency to teach as they were taught

Teachers will need Continuing professional development (CPD) not only to help with revised curricula and evolving methods, but also to reenergise and motivate them.

With regards to teacher effectiveness evidence suggests a large part of the variation between teachers cannot be explained by teacher education or qualifications. Other factors contribute to the performance of teachers includes:

- Personal characteristics
- Social recognition
- Contribution to student learning (if other barriers to education exist, this may impact on teacher motivation)
- Opportunities to progress/career ladder
- Lack of stability

### **Curriculum**

Curriculum reform is a critical part of the transition of secondary education in SSA from an elite to a mass system. In many countries, curricula and examination systems have changed remarkably little for decades, and the colonial legacy is still clearly visible. Curriculum reform is needed in many countries, driven by concerns about local relevance in rapidly changing societies, by the different priorities and aspirations of a much larger student body with a changing social composition, and by the need in growing economies to train the personnel required for effective participation in a technology-driven global economy. This need is leading countries to consider the following reforms:

- Including all or part of junior secondary education in a basic education program of 8–10 years
- Strengthening the linkages with, and preparation for, the world of work through vocational preparation modules
- Improving mathematics and science teaching by establishing an integrated core science curriculum at JSE, improving teacher qualifications, and ensuring an adequate supply of instructional materials, thus providing incentives for students to select math and science streams at the senior secondary level
- Incorporating ICT in the curriculum and improving the quality of instruction by establishing linkages with nongovernment and private providers of training and technical support
- Ensuring that schools prepare students for future learning (learning to know) and effective participation in civil society (learning to live together)
- Reforming examination and assessment systems in support of curriculum reform and implementation by moving toward curriculum referenced examinations, regular national assessments of student learning, and participation in international or regional assessments for comparison purposes
- Training teachers in classroom assessment techniques to improve student learning.

This curriculum change process will be successful only if it is explicitly designed to ensure the linkages between the different parts of the system. Education between levels should be seamless. Curricula will need to emphasise the skills for further learning and skill acquisition. Curricula should be closely linked to the desired exit profiles for graduates. The aim is no

longer to cater to a small group of students in search of further formal education, but schools will now have to prepare a much larger group for work and lifelong education and training. Beyond academics, curricula will have to recognise the importance of preparing students for healthy living and active participation in rapidly changing, increasingly democratic societies.

Robust research evidence suggests that strong performance in math and science in international assessments is strongly associated with economic growth performance. The performance of students from SSA in these subjects is often disappointing. The subject matter is perceived as difficult, and many students avoid advanced studies in these areas when they can do so. A redesigned curriculum in science and math should provide a solid understanding of the basic principles, with practical applications linked to the local environment for all students, as well as opportunities for more advanced work for students who want to pursue careers that require a deeper understanding of science and math. Curricula that focus on the depth of understanding usually provide better results than those that emphasise coverage of a large number of topics. Teacher training and support, provision of an adequate supply of instructional materials, and opportunities for practical application are essential for the successful implementation of science and math curricula.

A basic understanding of and competence in the use of ICT is an objective that has been introduced in secondary curricula in SSA. At the junior level, the emphasis is typically on teaching computer literacy, including the use of common software programs. At the senior level, the focus is on the use of more advanced applications for research and problem solving. ICT related curricula will need to adapt to rapidly changing technologies and labour market demand. In most cases, this adaptation requires regular review (every three to four years) of the content and related teacher training requirements. In practice, many students have only limited access to computers, curricula are often designed without consideration of realities at the school level, and few schools have teachers able to teach ICT effectively. The use of ICT is rarely integrated in the teaching of other subjects. Yet, preparation for a world of work, which is increasingly dependent on the use of ICT, makes it imperative to offer students the opportunity to acquire basic ICT competencies. Investments that provide hardware and software support and that include provision for teacher training have promising results, especially when implemented in partnership with private sector providers.

Financial constraints, however, may make selective implementation necessary, and care should be taken that allocations for ICT are not made at the expense of textbooks and other essential instructional materials.

For more details on curricula reform of junior and senior secondary education see Table 6.6 on page 212

### **Financing**

Increases in public funding for secondary education will be largely dependent on accelerating economic growth and the ability of governments to mobilise public resources. SSA's slowly and unevenly emerging demographic transition, often with fragile economic growth, makes the task even more difficult. Thus, even under the best of circumstances, the financial framework for secondary education development in this region will be extremely constrained. Expansion of secondary education as it currently exists is financially and educationally inconceivable. The absence of action in the face of rapidly expanding demand for places in secondary schools is likely to have highly negative consequences for quality.

In much of SSA the current per student costs preclude any significant expansion of secondary education, unless countries are ready to accept significant deterioration in the teaching and learning environment and, as a consequence, in student learning achievement.

Changes in the way the system currently delivers secondary education and mobilises and allocates resources may include:

- Increasing the efficiency of resource deployment in secondary education, resulting in reductions in the cost per student;
- Reorganising the way junior secondary education (JSE) and senior secondary education (SSE) are provided;
- Diversifying sources of funding.

The resource environment for the development of secondary education in SSA is unlike the one faced by industrial countries or other developing countries earlier in their development:

- Income levels are lower, income distribution is more skewed, economic growth is uneven, and large parts of the economy are subsistence based; secondary education expansion is taking place earlier in the development process and at much lower levels of GDP per capita.
- Fertility rates and dependency ratios remain high.
- Primary education development remains incomplete and still requires significant additional resources.
- Several cost parameters, often still part of the colonial legacy, are unsustainable in a rapidly growing system.

In most countries, the expansion of access will not be possible unless the cost per student comes down, which will mean considering more efficient deployment of teachers by:

- Increasing parent teacher ratios, class sizes, and the contact hours of teachers while reducing teacher-to-class ratios
- Bringing teacher salary levels in line with the national resources available
- Reducing publicly funded boarding expenditures by limiting access provided at public expense only to poor students from remote and sparsely populated areas
- Managing the cost of infrastructure carefully
- Targeting scholarships on the basis of need and demonstrated academic performance.

These cost reduction measures will often need to be combined with policies designed to ensure an adequate supply of inputs, particularly textbooks, essential for a school environment to provide meaningful opportunities to learn. Countries will need to take a hard look at the structure and organisation of the systems they have inherited and have often been reluctant to change. The duration of the basic education cycle and its cost parameters, the starting point and the modalities for vocational and technical education, as well as issues related to curriculum content, especially in junior secondary education, are key elements of the transformations that will be impossible to avoid. More public resources will be necessary to meet the goals of rapidly expanding junior secondary education and gradually developing the senior secondary level. In most countries these resources will have to be generated by accelerating economic growth and by increasing the growth of government revenue. However, only in a few countries will public efforts be enough. Governments will need to create an environment in which public and private resources combine to support secondary education.

### **Infrastructure**

Expanded secondary education requires development expenditure to construct additional classrooms, laboratories and workshops, and new schools; to purchase furniture, equipment, and learning materials; and to provide supporting infrastructure.

Infrastructure costs are often high and rapid increases in student numbers are forcing countries toward emergency solutions. In Mozambique, for example, secondary schools are taking over primary school buildings, whose students are then forced into open air classes or multiple shift arrangements. Double or triple shifting is increasingly common in many countries, including Senegal, Guinea, and Mozambique.

Developing strategies to use buildings more intensively is important: double-shift use of a building, if well organised, can result in significant cost savings. As long as the number of hours of effective instruction is not compromised double-shift use of classrooms can be highly cost effective.

Classroom and school design should be kept simple and standardised where possible. Community involvement in the development of infrastructure can play the most important role, especially when the government provides technical support and recognises the poorest communities may be limited with what they can contribute. In Kenya, the government rarely provides financial support for infrastructure development.

Laboratory provision can add significantly to the cost of secondary school infrastructure. The cost of laboratories varies enormously across countries and may be five or more times the cost of normal classrooms, yet little evidence indicates that learning gains are commensurate. Where costs are high and resources are limited, an ordinary classroom with basic facilities for teaching non-specialised science should be considered.

Information and Computer Technology (ICT) infrastructure is hard to maintain. In many African countries, the purchase and installation of computers is supported by donors. The subsequent maintenance of the computers and their infrastructure, typically the responsibility of the schools, has become a substantial—often insurmountable—challenge for schools and educational systems. ICT laboratories with many more broken than functioning computers are common. Lack of infrastructure (telephone lines or other high-speed Internet access) often limits the effectiveness of instruction.

Libraries form an important part of school infrastructure in most developed countries, yet are found lacking in most secondary schools in SAA. Unlike most other countries in SSA, Botswana has an effective secondary school library system. All government secondary schools in Botswana have libraries as part of the school infrastructure. Every secondary school has a designated librarian who is either a trained teacher or a full-time trained librarian. Botswana also provides a dedicated school library budget of about \$5 per student per year. Few countries can allocate such resources to school libraries.

### 3. Quality

**Lewin, K. 2000, *Mapping Science Education Policy in Developing Countries*, Human Development Network, World Bank, Washington, DC.**  
<http://unpan1.un.org/intradoc/groups/public/documents/apcity/unpan002288.pdf>

This paper maps out the factors that shape science education policy in developing countries. While focused on one discipline in particular (science), many of the findings are relevant across the secondary education field. For example, it states that many studies suggest that more qualified and experienced science teachers are associated with higher levels of achievement in science. It also states that attracting and retaining science graduates into the teaching profession remains a serious problem in countries where these graduates are high in demand and are better paid in the private sector in other occupations. It is possible that some students are entering the teaching profession after failing to find other employment opportunities. This is likely to be less of a problem where the output of those with science qualifications has been large and there are more applicants than places for teacher training. A surplus of science qualification holders, whether as a result of an over-production of graduates or of a shrinking labour market means that higher quality applicants can be selected than would otherwise be the case.

The length of teacher training programmes, as well as the minimum entry level for entrants varies across countries and regions and as a result so does quality of the teacher once they qualify. Levels of achievement amongst entrants to teaching in the developing countries context are often unimpressive. It is not unusual to find that many science teacher trainees have low grade passes in science at secondary level. Where this is so it carries implications for the nature of training since subject competence is weak. Also, many entrants already have teaching experience. In principle this experience provides some evidence of the suitability and competence of trainees that can be used to improve selection. In practice, this is rarely done systematically.

The major curriculum issues in most training systems are the balance between subject matter upgrading, general education and pedagogic studies, and professional studies including teaching practice. Effective science teaching undoubtedly requires an adequate level of subject matter knowledge. It also requires some theoretical understanding of how students learn and the professional skills associated with managing learning, motivating learners and presenting material in forms that can be understood by students of different ages and capabilities. Decisions on what the balance should be have to consider the subject competence of trainees on entry, the level at which they will teach, the nature of the schools in which they will teach, and the time and other resources available for training. The effectiveness of training is likely to be associated with the extent to which training experiences are matched to likely teaching environments. This includes class size and student to teacher ratios.

Historically inherited patterns of training, most obviously two to four year full time pre-service, may no longer be appropriate to changed conditions. If the competence of trainees is low, it may be more cost effective to concentrate on teaching science first to potential teachers to bring them up to a level sufficient to teach with confidence. This is likely to be cheaper to do in upper secondary schools than in training colleges, assuming that schools of sufficient quality exist.

In the teacher education literature there is much enthusiasm for school-based training, but this is a pathway with severe limitations in resource poor countries with a high proportion of untrained teachers in schools.

**Ware, S. A. 1992, *The Education of Secondary Science Teachers in Developing Countries. PHREE Background Paper Series 92/68*, World Bank, Washington, DC.**  
[http://siteresources.worldbank.org/EDUCATION/Resources/278200-1099079877269/547664-1099080063795/The\\_education\\_of\\_secondary\\_science\\_teachers\\_EN92.pdf](http://siteresources.worldbank.org/EDUCATION/Resources/278200-1099079877269/547664-1099080063795/The_education_of_secondary_science_teachers_EN92.pdf)

This paper reviews the status of pre-service and in-service secondary science teacher preparation in developing countries. It is clear that teacher quality has an impact on student achievement. The educational qualifications of secondary science teachers, their ways of presenting science to their students and their attitudes toward science have all been shown in various studies to have a significant impact on the achievement of their students. It should never be forgotten that teachers are the front-line agents of educational innovation.

As secondary education enrolment expanded, many countries allowed large numbers of unqualified students to enter teaching without any form of training. These countries are currently seeking the most cost-effective ways to provide in-service education to as many teachers as possible to bring them up to the current entry-level standards. A variety of opportunities are available to accomplish this, including residential and distance education programs (including correspondence and electronic media-based courses). Distance education is particularly cost-effective but needs to include sufficient hands-on science and teacher/tutor interactions to impact on the teacher's comfort-level in the laboratory.

The paper demonstrates that the educational qualifications and attitudes toward science of secondary science teachers influences the achievement and attitudes of their pupils. Teachers tend to teach the way they were taught; teaching without initial supervision tends to promulgate bad habits. These can only partially be rectified by practice teaching under the direction of a master teacher. The novice teacher needs some formal instruction to give perspective and meaning to the classroom experience.

In order to improve science teaching in the schools, the first priority must be to upgrade the science and/or pedagogical background of the teacher trainers. In most countries, the teacher trainers need to be upgraded in terms of both science knowledge and pedagogy. They also need to know how to relate the two areas.

Teachers must also accept some responsibility for their own continuing professional development. For example they should be encouraged to read journals, join teacher organisations and attend workshops. This may be at their own expense.

**Coolahan, J. 2002, Teacher Education and the Teaching Career in an Era of Lifelong Learning. *Education Working Paper No. 2*, OECD Directorate for Education, Paris.**

<http://www.oecd-ilibrary.org/docserver/download/514rvswm8636.pdf?expires=1360237404&id=id&accname=guest&checksum=19AEA9B24EC62DBCE97DE81EC1BD607E>

The objective of this paper is to provide policy makers with information and analysis to assist them in formulating and implementing teacher policies leading to quality teaching and learning at the school level. It attempts to position the teaching career within the context of the changing policy paradigm of lifelong learning.

Among the papers extensive Guidelines for Action section (pp. 31), it is suggested that investment in good quality induction and in-service education is crucial for teachers in a lifelong learning context.

Guidelines for best in-service practice, as incorporated in the OECD's Staying Ahead: In-service Training and Teacher Professional Development, (1998) should be drawn upon, which can be found at [http://www.oecd-ilibrary.org/education/staying-ahead\\_9789264163041-en](http://www.oecd-ilibrary.org/education/staying-ahead_9789264163041-en)

**Harris, D. & Sass, T. 2011, Teacher training, teacher quality and student achievement, *Journal of Public Economics* 95, 798–812**

<http://www.sciencedirect.com/science/article/pii/S0047272710001696>

This paper looks at the effects of various types of education and training on the productivity of teachers in promoting student achievement in the USA. It was found that the largest gains from experience occur in the first few years of teaching. Gains continue beyond the first five years of a teacher's career, but are less significant. No consistent relationship between formal professional development training and teacher productivity was found. There is no evidence that teachers' pre-service (undergraduate) training or college entrance exam scores are related to productivity.

**Hungi, N. & Thuku, F. 2010, Differences in pupil achievement in Kenya: Implications for policy and practice. *International Journal of Educational Development* 30, 33 – 43**

[http://www.eric.ed.gov/ERICWebPortal/search/detailmini.jsp?\\_nfpb=true&\\_ERICExtSearch\\_SearchValue\\_0=EJ857509&ERICExtSearch\\_SearchType\\_0=no&accno=EJ857509](http://www.eric.ed.gov/ERICWebPortal/search/detailmini.jsp?_nfpb=true&_ERICExtSearch_SearchValue_0=EJ857509&ERICExtSearch_SearchType_0=no&accno=EJ857509)

This multilevel analysis of pupil achievement in Kenya found that pupil–teacher ratio were important factors. It was found that pupils taught by teachers who had higher reading scores

were likely to achieve better in reading than pupils taught by teachers with lower reading scores.

**Heyneman, S.P., Loxley, W.A., 1983. The effect of primary-school quality on academic achievement across twenty-nine high- and low-income countries. *American Journal of Sociology* 88 (6), p. 1184**

<http://www.vanderbilt.edu/peabody/heyne/PUBLICATIONS/198302.pdf>

Measuring the levels of school quality poses definitional and methodological problems. In education, a high level of quality implies a high level of educational product, especially of academic achievement among pupils. Academic achievement is affected by both out of school and in school factors. Quality can therefore be impacted by cohort of birth, sex, intelligence, socioeconomic status, nutrition, housing, character of neighbourhood, access to libraries, role models of diligence, honesty.

“The poorer the national setting in economic terms, the more powerful this [school and teacher quality] effect appears to be” (quoted in Hungi & Thuku 2010)

**Heyneman, S. 2004, International education quality. *Economics of Education Review* 23 (2004) 441–452**

<http://labor.bnu.edu.cn/resource/jee/0408/13.pdf>

Impact of education is commonly derived from its quality, but that there are multiple indicators of educational quality which do not necessarily operate in uniform fashion. In nations with full enrolment and high educational expenditure the impact of investments varies considerably.

Current issues which dominate education quality debates concern the degree to which nations are differentiated not by educational access but by quality. High income nations are able to invest per student about 300 times more than low income nations. Investments in educational quality are growing throughout the world, with the exception of sub-Saharan Africa. However, it cannot be assumed that educational efficiency is strongly associated with educational expenditure. In many instances, school systems in middle income nations exhibit higher rates of efficiency than school systems in high income nations.

**Bregman, J. & Bryner, K. 2003, *Quality of Secondary Education in Africa (SEIA). Association for the Development of Education in Africa (ADEA) Biennial Meeting 2003 (Grand Baie, Mauritius, December 3-6)***

[http://www.adeanet.org/adeaPortal/adea/biennial2003/papers/7A\\_Bregman\\_ENG.pdf](http://www.adeanet.org/adeaPortal/adea/biennial2003/papers/7A_Bregman_ENG.pdf)

Quality is not a definitive quantity or form but rather an evaluation relative to arbitrary standards or international trends. Consequently, most discussions on the quality of an education system concentrate on quality indicators such as inputs. The consensus is that motivated teachers contribute to raising student achievement.

Possibly the most important single factor in secondary school effectiveness is the quality and relevance of teaching. High quality teaching involves the teachers' solid knowledge of the subjects, interactive pedagogy, keen classroom management and the ability to provide students with helpful feedback and evaluations.

In some African countries repetition and failure have been regarded as a “proof of quality” since only the highest quality students can survive to the final grades of the secondary system. Teachers should be responsible for their students passing rather than being proud of the large numbers of students they have not enabled to pass. It is an enormously costly method of providing secondary schooling by the public and private schools alike. It happens in both Francophone and Anglophone countries, and contrary to common belief among teachers in Africa this is not a student-ability problem. Why should African youth be less able

to learn than their Asian or Latin American counterparts? It is a problem of misinformed and insufficiently trained teachers. Consequently, this system creates significant inefficiency and therefore it prevents the system from expanding.

#### 4. Curriculum

##### **World Bank. 2008, Curricula, examinations and assessment in secondary education in Sub-Saharan Africa. *World Bank Working Paper no.128***

<http://siteresources.worldbank.org/INTAFRREGTOPSEIA/Resources/No.5Curricula.pdf>

This paper offers a detailed overview of curriculum and assessment in secondary education in Sub-Saharan Africa (SSA). It describes the formal curriculum and curriculum structures; and the operational curriculum and assessment practices. It discusses strategies for successful reform of the curriculum and assessment:

- The formal curriculum and curriculum structures:

*Subjects and Learning Areas in Junior Secondary.* Current educational reforms in SSA organise subject content in core and optional subjects and in learning areas. The trend is to limit the number of possible subject combinations (to reduce curriculum overload, to facilitate active learning approaches, and to deal with limited availability of subject teachers). The trend is also towards a deeper (rather than broader) focus in the way content is dealt with and allow for personal development and maintenance of cultural and social cohesion. The integration of subjects follows an international trend, but its implementation is not without problems as an integrated subject is usually taught by a number of individual teachers of the subjects of which it is made up. The lack of materials using an integrated approach is another hindrance to proper implementation.

*Subjects and Learning Areas in Senior Secondary.* Two basic senior secondary curriculum structures dominate in SSA, each subscribing to a different understanding of exit skills at the end of the secondary level. The first and wider-spread structure prescribes Language (either the local and the instructional language, or the instructional language only) and Mathematics as (part of) compulsory core subjects, with additional elective subjects optional for students to choose. The second structure (for example, in Tanzania) offers specialised and highly selective combinations of core courses of usually three subjects, which schools may define, and which define the school.

- The operational curriculum: the curriculum in the classroom

*Current Trends in Instructional Methodology.* Recent curriculum reforms in SSA have focused on modernising teaching methods in the classroom, away from teacher dominated classrooms to more active forms of learning. However, studies indicate that the implementation of active learning approaches is problematic and far removed from the ideal situation suggested in the curriculum documents. Classroom reality continues to be described in terms of dominant teachers, silent students, and chalk and talk. Reasons for this are discussed.

*Teacher Support Materials.* The changing role of teachers—from source of information to facilitator in the learning process— requires support for teachers. Similar support is needed for new content in the curriculum. An effective way to structure this support is by providing exemplary teacher support materials as part of an in-service education scenario. This is particularly in the initial stages of implementation. To be effective, support materials should:

- Provide theoretical background information on the meaning of the change;
- Demonstrate the practical meaning of the change;
- Provide users with opportunities to experiment with exemplary activities, thereby gaining insight into the consequences of the change; and
- Provide concrete resources that can serve as a frame of reference for the intended educational change.

*Textbooks.* In SSA secondary education, textbooks usually determine the depth and breadth of the curriculum. Quality of textbooks is therefore of utmost importance, both in terms of

subject content and instructional processes. However, the latter part is often absent in textbooks as they mostly concentrate on content.

- **Attained curriculum: assessment and assessment practices**

Secondary education in SSA is dominated by examinations. Students write examinations at the end of a topic, end of term, the end of the year, as well as final national examinations at the end of junior secondary and senior secondary education. Educational outcomes in SSA are measured by the results of the examinations. Students, teachers, and schools derive their credit from examination results. "Teachers teach for examination success" is the often-heard phrase in SSA. The result is that teachers train students to reproduce facts and definitions, leading to rote-learning.

Analysis of junior secondary examination results show that students generally pass in the lowest categories. In examination results at senior secondary education, achievements are mostly in the lower and middle range. There are numerous reports of leakages in the examination system and fraudulent practices.

Current curriculum reform activities in SSA countries are not always matched by reforms in assessment practices. The lack of alignment between curriculum and assessment is seen as a hindrance to efforts to implement modern teaching and learning practices as intended. The lack of alignment can be attributed to the lack of communication and cooperation between agencies at the national level; It also indicates problems with institutional capacities in many SSA countries. Continuous assessment is more and more executed as a way to test achievement at school level, especially of skills. However, in reality it appears to be more of the same written test for knowledge, sometimes understanding.

At a technical level, SSA countries face practical problems that often stand in the way of implementing more adequate assessment strategies. In addition to questions of logistics, alignment, professionalism and accountability, other assessment and examination challenges include:

- The definition of standards and accepted levels of performance;
- Differentiation between standard (core) and higher grade;
- New forms of assessment of skills, particularly as part of continuous assessment (CASS);
- Improvements in the quality of examinations, especially in the area of assessment items, and training for those setting these items;
- Improvements in moderating and monitoring, professional development and building capacity in the examination system;
- Sensitivity to language problems of students; and
- Statistical analysis of the examination results to provide feedback on progress and effectiveness of the implementation of the curriculum.

The introduction of new and reliable assessment instruments need to be supported by professional development programs (both in in-service scenarios and in pre-service teacher education programs) in support of teachers introducing them.

**Holsinger, D. 2000, *Positioning Secondary-School Education in Developing Countries: Expansion and Curriculum. Policies & Strategies for Secondary Education.* United Nations Educational, Scientific, and Cultural Organization, International Inst. for Educational Planning**

<http://unesdoc.unesco.org/images/0012/001224/122425e.pdf> .

This book, written from the policymaker's perspective, examines key issues facing education ministries trying to find the optimal size of and curricular emphasis for their secondary-education systems. It sets out the principle choices to be made and the dilemmas

encountered regarding the scale and thrust of the sector. The work first looks at key definitions and gives a brief historical overview of the secondary-education system. It sets out basic parameters of understanding secondary education and its role in the overall education system and analyses the different types of secondary schools. It then goes on to examine the development of secondary education in the developed world and in developing countries. It then introduces the concept of positioning i.e. finding the correct balance between access and curriculum emphasis that allows the secondary-education system to satisfy a particular set of criteria. It also examines the case for diversified education and points out that overall context within which education systems function is changing. Finally it sets out the different policy options and pinpoints important strategic decisions to be taken into account when designing a curriculum. They are grouped into three overlapping areas: organisation, content, and control.

**Clegg, A. Bregman, J. & Ottevanger, W. 2007, *Uganda Secondary Education & Training Curriculum, Assessment & Examination (CURASSE) Roadmap for Reform***  
[http://siteresources.worldbank.org/INTAFRREGTOPSEIA/Resources/Uganda\\_Curasse.pdf](http://siteresources.worldbank.org/INTAFRREGTOPSEIA/Resources/Uganda_Curasse.pdf)

This paper describes plans for curriculum change in Uganda in the context of rapid expansion of secondary education provision.

Uganda made the decision to proceed rapidly from a secondary system designed for a small academic elite to one designed for the whole age cohort. This has an impact on every aspect of the curriculum process. The “Curasse Roadmap” report looks in detail into why the curriculum change is required. The main reason is the need to change the curriculum from an exclusive one characterised by high entry qualifications and high failure rates to an inclusive one which is open to all and rewards achievement. The curriculum change is also intended to reduce the unit cost of secondary education. A third important reason is that the existing curriculum is not delivering the kind of skills that the labour market requires to meet the emerging needs of the nation.

A key feature of the proposed curriculum reform will be the separation of the curriculum from its assessment. The curriculum will then determine what is taught and also what is examined and how. The curriculum will be developed within an overarching curriculum framework. This framework should specify the governing principles on which the curriculum would be built and implemented. In addition to the aims of secondary education, this framework would specify not only what is taught but also how it should be taught and how it should be assessed. It would specify the curriculum time balance between subject areas, how the teaching should address all abilities, and what minimum resources are needed. Within this framework, subject statements would be developed. Some research will be required at an early stage to determine what the labour market requires in terms of the profiles of those graduating from the system at its different levels. These graduate profiles will need to be built into the curriculum framework.

The curriculum framework and the subject statements would then be used to develop recommended programs of study (and associated materials) for use in schools and also examination syllabuses. Both the programs (and their pedagogy) and the examinations should be appropriate for a wide range of abilities, both of which will be novel developments in Uganda.

**Pritchett, L. & Beatty, A. 2012, *The Negative Consequences of Overambitious Curricula in Developing Countries. Center for Global Development Working Paper 293***  
[http://www.cgdev.org/files/1426129\\_file\\_Pritchett\\_Beatty\\_Overambitious\\_FINAL.pdf](http://www.cgdev.org/files/1426129_file_Pritchett_Beatty_Overambitious_FINAL.pdf)

This paper offers a critique of overambitious curricula in developing countries. The authors argue that many education systems are attempting to push children through curricular material faster than their teachers can teach it and their students can learn it. Students fall

behind and eventually stop learning. The authors provide a formal model of this phenomenon and provide empirical evidence on its implications.

Using data from three recent studies in South Asia and Africa, Pritchett and Beatty show that a majority of students spend years of instruction with no progress on basics, in part because curricular paces move much faster than the pace of learning. They construct a formal model that portrays learning as the result of a match between student skill and instructional levels, rather than the standard (if implicit) assumption that all children learn the same from the same instruction.

Their simulation shows that two countries with exactly the same potential learning could have massively divergent learning outcomes, with the country that goes faster having much lower cumulative learning.

**Alvarez, B., Gillies, J. & Bradsher, M. 2003, *Beyond Basic Education—Secondary Education in the Developing World*. Academy for Educational Development and the World Bank Institute.**

<http://siteresources.worldbank.org/WBI/Resources/wbi37229AlvarezGilliesBradsher.pdf>

This collection of essays covers a range of issues regarding the development of secondary education in the developing world.

**In chapter 2, Critical Policy Issues in the Development of Secondary Education**, the need for changes in curricula is discussed, in relation to the rapid expansion of secondary education and in relation to the competencies required in a changing employment sector, including technological competencies.

In countries with low secondary school enrolment rates, most graduates generally tend to enrol in universities. The classic curriculum prepares them for higher learning and selects students for the diverse demands of the higher education market. Rapid expansion of secondary education poses a different situation for school curriculum in terms of the diversity of needs of a heterogeneous clientele. The dilemma for those in charge of defining school curricular policies increases, and is three-fold. The first issue is that of general versus specific education. The second is about unity and diversity: that is, a core curriculum versus the diversity of alternatives available for different needs. The third is the tension between universal, national, and local requirements.

Should the secondary school curriculum prepare generalists or specialists? If secondary school were a terminal stage for all students, this question would be easier to answer. But this is no longer the case. The combination of general and specific education cannot be defined a priori without considering the type of competencies required for employment in particular contexts; the characteristics and dynamics of the employment sector, including its technological development; and the possibility of introducing incentives for developing effective enterprises.

As the needs of a diverse student body expand, policy makers and curriculum development specialists should ask themselves about the composition and structure of a common curriculum for all students. The school curriculum is increasingly influenced by the evolution of technology. The relationship between technology and curriculum in secondary education is twofold. The first aspect is the consideration of technology as an instrument of the school curriculum—that is, the use of computers and the internet as a learning tool.

The second aspect is the consideration of technology as a content area of school curriculum, focusing on the need for all secondary students to be prepared for the changing work place. The key questions, in this case, would be what students should know about technology, what important technological competencies are required for the general work environment and for continuing education, and at what level of performance students need to develop such competencies.

In Chapter 3, *Secondary Education and Work*, the need to adapt the secondary curriculum to prepare young people for employment is discussed.

The author poses the question, “Is the highest level of the basic education system adequately preparing adults to make a productive contribution to a growing economy?”

Governments need to consider primary issues affecting secondary education and workforce development as part of the process of policy making. Those primary issues can be framed by the following questions:

How do the “new economy” and other major economic forces affect labour force requirements?

What kinds of skills are needed in the new economy and how are they different from the historical norm?

What kinds of curriculum and pedagogy are needed to develop those skills?

How have different national systems sought to address these issues?

How can employers and schools interact to improve the relevance of education?

This chapter discusses these questions and the different approaches taken by countries in their efforts to adapt education to the needs of a constantly evolving economic environment.

In 1991, the U.S. Department of Labor’s SCANS report (Secretary’s Commission on Achieving Necessary Skills) identified specific skills and knowledge that schools should develop in students. It identified five competencies and three foundation areas needed for success in the workplace. These are—

Competencies:

- 1) Identify, organise, plan, and allocate personal resources
- 2) Engage in effective interpersonal relations with others
- 3) Acquire and use information
- 4) Understand complex system relationships
- 5) Select, apply, and use a variety of technologies

Foundation skills:

- 1) Basic skills in reading, writing, problem-solving, and reasoning
- 2) Thinking skills used in making decisions and solving problems
- 3) Personal qualities needed to develop positive feelings about oneself

These have direct implications for curriculum. A common typology for secondary curriculum requirements is:

- 1) General competencies, such as the SCANS foundation skills listed above
- 2) Specific competencies required for specific jobs and career tracks
- 3) Attitudes and values appropriate and necessary in the workforce

Substantial overlap exists in the educational requirements of academic and technically oriented students. The first and third requirements lend themselves to a general education with an explicit orientation toward joining the working world. These requirements do not preclude either academic or technically oriented students. The second requirement suggests more specialised training, in which students with different interests learn different ways. It is in this area that a closer relationship to employers is critical. In view of the breadth and complexity of the workforce—from electronics repair to plumbing to hairdressing—it is unlikely that any single school system would be able to provide all of the appropriate technical training, as well as academic preparation for university. Moreover, given the expectation that specific requirements will change numerous times over a working life, it may be most critical that the formal compulsory school system establishes the critical foundation skills necessary for all further development. In this environment, however, it is also important that the national educational and training system be sufficiently deep and broad to provide access to continuing education and retraining for the adult population.

Lee, Y., Cho, J., Tau, A. & Pereira, C. 2002, *Vocational Training and Technical Qualification Systems in Korea and South Africa*. Korea Research Inst. for Vocational Education and Training, Seoul. 329

[http://www.eric.ed.gov/ERICWebPortal/search/detailmini.jsp?\\_nfpb=true&\\_ERICExtSearch\\_SearchValue\\_0=ED474318&ERICExtSearch\\_SearchType\\_0=no&accno=ED474318](http://www.eric.ed.gov/ERICWebPortal/search/detailmini.jsp?_nfpb=true&_ERICExtSearch_SearchValue_0=ED474318&ERICExtSearch_SearchType_0=no&accno=ED474318)

A comparison of vocational training and technical qualification systems in Korea and South Africa shows both countries are responding to similar changes in economic and enterprise structures. South Africa's work experience learnership system is more desirable than Korea's more traditional separation between formal education and workplace training, although the former lacks complete theory/practice integration. Korea could learn from South Africa's shift from education for employment to education for employability. Conversely, private enterprise support for education, comparatively high educational levels and low rate of attrition from schooling in Korea indicated lessons that could be learned by South Africa. Among factors that could improve both systems are these: (1) flexible educational delivery systems; (2) implementation or continuation of a national qualifications framework; (3) ensuring relevance between education and training; and (4) greater cooperation between government, employer organisations, labour unions and educational institutions.

## 5. Financing

Caillods, F. 2001, *Financing the expansion of secondary education pp1-4 IIEP newsletter Vol XIX, (4) International Institute for Educational Planning*

[http://www.iiep.unesco.org/fileadmin/user\\_upload/pdf/octe01.pdf](http://www.iiep.unesco.org/fileadmin/user_upload/pdf/octe01.pdf)

This article provides a short summary of the rationale for the expansion of secondary education; the costs of secondary provision; options available to finance the expansion of secondary education and case studies of the strategies which several countries have used to achieve this.

Unit costs are typically much higher at secondary than at primary level but cost differentials are particularly high in those countries that have low secondary enrolment ratios. In countries where secondary education is well developed, a secondary school student costs on average 1.3 times that of a primary pupil, but in those developing countries with the lowest secondary enrolment rates, enrolling a secondary school pupil may cost up to 3.5 times as much. The reasons for this include boarding costs, low efficiency in the use of teachers and the relatively high salaries of secondary school teachers compared to primary school teachers. While in OECD countries a secondary school teacher earns, on average, only slightly more than a primary school teacher, in Mali, Uganda and Botswana a secondary school teacher can earn twice as much as a primary teacher. The costs of secondary schooling are particularly high in African countries: the reasons for this differ from case to case and require analysis.

Various options are open to countries that want to expand access to secondary education, these include:

- Increasing the share of government resources spent on education and secondary education
- Reducing unit costs
- Increasing internal efficiency
- Developing cost sharing mechanisms
- Raising the proportion of private education, using distance education and calling on external assistance.

Different countries illustrate different strategies: Zimbabwe, for example, succeeded in significantly increasing access to secondary thanks to a high level of public resources set aside for education, combined with a reduction in unit costs resulting from an increase in

pupil/teacher ratio and the extensive use of untrained teachers during the first ten years. The introduction of automatic promotion, double-shifting and cost-sharing mechanisms has also contributed to making enrolment expansion affordable. Sri Lanka is another country that succeeded in expanding its school system up to Grade 11 at relatively low unit costs. Many secondary schools include primary sections and vice versa and teachers are not so clearly divided between primary and secondary as they are elsewhere. This has contributed to keeping cost differences between primary and secondary education low. China shows different strategies again. Salaries have been kept fairly low and various schemes of privatisation of public education have been undertaken. Common financing arrangements include earmarked local taxation for education levied on business turnover, school-run businesses, fees and local fund raising. Many lessons can be drawn from such experiences.

**Lewin, K. & Calliods, F. 2001, *Financing Secondary Education in Developing Countries: Strategies for sustainable growth*, UNESCO-IIEP**  
[http://upo.unesco.org/details.aspx?Code\\_Livre=3801](http://upo.unesco.org/details.aspx?Code_Livre=3801)

This book explores the problems that surround secondary school financing, outlines the rationale for expanding secondary education and investigates under what conditions it might be possible to do so at sustainable levels of cost. It carries out the analysis for different groups of countries, using data derived from the UNESCO database. Then, it analyses the issue on the basis of case studies in Asia, Latin America and Africa. It concludes with a discussion of the policy options that offer prospects of improved access at sustainable levels of cost without unacceptable deterioration in quality.

#### **Resources with a focus on African Countries**

**Lewin, K. 2008, *Strategies for sustainable financing of secondary education in sub-Saharan Africa, World Bank Working Paper no.136***  
[http://siteresources.worldbank.org/INTAFRREGTOPSEIA/Resources/Study1\\_Financing.pdf](http://siteresources.worldbank.org/INTAFRREGTOPSEIA/Resources/Study1_Financing.pdf)

This paper argues that in order to sustainably finance the expansion of secondary education in sub-Saharan Africa, the total budget available for secondary education will need to be increased and cost-saving reforms that reduce costs per pupil and increase efficiency will need to be implemented.

Secondary schools in Sub-Saharan Africa (SSA) enrol just 25 million of the region's 93 million children of secondary-school age. For the region as a whole, less than one-third of the cohort enrolls in upper-secondary grades.

Educational reforms are needed to expand enrolment in secondary schooling in affordable ways. These reforms will contribute to poverty reduction by increasing the levels of knowledge, skills, and capability and diminishing inequalities in access that limit social mobility and skew income distribution.

Secondary schooling in low-enrolment countries is expensive relative to per capita GDP. As a proportion of the number of working-age adults who can generate the revenue to finance schools, the number of school-age children in the region is high. Efficiency and effectiveness gains are needed to reduce the costs per pupil to levels that allow mass enrolment.

Increased secondary enrolment within current cost structures is severely constrained. Low-enrolment countries in the region allocate relatively small amounts of public expenditure to secondary education (sometimes less than 10 percent). In these countries, increasing enrolment to, say, 60 percent without cost-cutting reforms would require at least a quadrupling of allocations to secondary education. Increases of this magnitude are not plausible, especially where Education for All (EFA) and Fast Track Initiative (FTI) commitments protect spending on primary education.

Public expenditure per pupil at the lower-secondary level averages about three times that at the primary level and about six times that at the upper-secondary level. Cost per pupil averages at least 30 percent of per capita GDP for lower-secondary and 60 percent of per capita GDP for upper-secondary school. In low-enrolment countries, the cost of a secondary school place may be as much as 100 percent of per capita GDP and more than 10 times as much as a place at primary school. These costs mean that substantial increases in access will be difficult to finance in a sustainable way without reforms. Relative costs per pupil will have to fall to levels closer to those found in high-enrolment countries, where secondary places usually cost less than twice as much as primary places. Costs per pupil will have to fall toward 20 percent of per capita GDP at lower-secondary and 40 percent at upper-secondary schools. Investment in secondary schooling as a proportion of national education budgets will have to increase if the development gains associated with expansion are to be achieved.

No one strategy of investment will suit all countries or country groups. Most countries will not be able to afford substantially expanded secondary enrolment without increasing the total budget envelope available to the education sector, increasing the share of that expenditure allocated to the secondary-school subsector, and implementing cost-saving reforms that reduce costs per pupil and increase efficiency.

A wide range of options could increase enrolment at affordable costs. Countries with low secondary-school enrolment need to reconsider policy in 11 areas: reallocating resources for education, changing education structures, containing recurrent costs, improving the flow of students, improving teacher deployment and utilisation, enhancing school management, reinforcing curricula, reforming teacher education, improving facilities and buildings, increasing cost recovery, and utilising nongovernment providers. Each of these areas invites policy review and presents opportunities to introduce reforms that could make expanded enrolments more affordable and likely to be sustained. See table below (Reproduced from pp12-13 of report).

<b>Summary of Affordable Options for Expanding Secondary Education</b>	
<b>Strategy</b>	<b>Options</b>
Reallocate budget resources	<p>Increase share of GDP allocated to education toward 5 percent of GDP.</p> <p>Increase education's share of public expenditure toward 25 percent.</p> <p>Increase share for secondary to more than 30 percent of total education spending.</p> <p>Agree on secondary-sector development plans with development partners, and seek additional support.</p>
Make structural changes	<p>Shorten the length of the education cycle to 12 years where it is longer; consider 6:3:3 or 6:4:2 systems.</p> <p>Extend primary schools to include lower-secondary grades on the same school site.</p> <p>Increase average secondary-school size to 500 or more where population density allows. Limit the range of optional subjects. Develop multi-grade teaching methods for small schools.</p> <p>Expand lower-secondary enrolment before upper-secondary; retain selection into upper-secondary school.</p> <p>Double-shift schools in high population density areas.</p> <p>Limit boarding schools to low-population areas, and increase the proportion of day schools. Progressively withdraw boarding subsidies, with safeguards for disadvantaged groups.</p> <p>Limit high-cost technical and vocational schools to upper-secondary level. Locate specific job-related training close to or in work places.</p> <p>Identify and support essential upper-secondary specialised institutions.</p>

<p>Contain recurrent costs</p>	<p>Review salary structures in relation to local labour markets and productivity. Move toward salary costs of 3.5, 4.5, and 6.0 times GDP per capita for primary, lower-secondary, and upper-secondary teachers. Review non-salary benefits to provide incentives in difficult areas.</p> <p>Review nonteaching salary expenditure, which can account for up to 40 percent of salary budgets; redeploy qualified staff back into the classroom as teachers. Establish norms for secondary nonteaching salary budgets, constraining it to less than 20 percent of total recurrent expenditure in day schools.</p> <p>Review non-salary costs if they represent more than 20 percent of total costs. Protect learning material expenditure. Consider replacing flat-rate subsidies for food, books, and other items with needs-based subsidies. Establish norms for non-salary costs of less than 15 percent of total recurrent expenditure in day schools.</p> <p>Develop norm-based funding systems (related to pupil, teacher, and school characteristics) to increase efficiency and equity; provide pro-poor subsidies to improve access. Develop effective capitation grant systems for non-salary expenditure.</p> <p>Develop quality improvement grant systems.</p>
<p>Improve the flow of students</p>	<p>Reduce repetition rates to less than 5 percent. Introduce management incentive systems that reward higher achievement and lower repetition. Reduce the range of ages within grades to less than two years.</p> <p>Identify reasons for dropout and act accordingly. Reduce barriers to enrolment, improve the attractiveness of curricula, ensure safety, support school feeding, and identify effective incentives to remain enrolled.</p> <p>Reduce direct costs to poor households. Rather than provide universal fee-free secondary education, use means-tested fee waivers and scholarship schemes. Discourage elite capture of subsidies, including by locating fee waivers and scholarships in low-fee schools and using selection quotas linked to poverty indicators.</p> <p>Adopt measures to monitor and improve attendance to ensure that learning opportunities are maximised. Make schools more child friendly and child seeking (i.e., more accountable for ensuring attendance and proactive in following up children out of school).</p> <p>Improve the reliability and validity of selection examinations. Consider automatic promotion within primary and lower-secondary cycles. Reduce incentives and limit opportunities to retake selection examinations. Integrate measures to improve flows into school management systems.</p>
<p>Improve teacher deployment and utilisation</p>	<p>Increase pupil: teacher ratios (PTRs) to a maximum of 40:1 in lower-secondary and 35:1 in upper-secondary schools.</p> <p>Reduce teacher: class ratios in secondary school to less than 2:1. Use more-efficient timetabling and grouping.</p> <p>Monitor variation in school inputs and performance indicators. Use formula funding to reduce variance across schools on PTRs, proportion of untrained teachers, class: teacher ratios, and textbooks per student. Aim to restrict variations in indicators to 10 percent of the average for all schools.</p> <p>Encourage recruitment of lower-cost teachers within career structures that allow development and promotion. Extend use of experienced teachers by using team teaching, parallel classes, and common lesson planning. Use experienced teachers to support less-experienced ones.</p>

	Employ contract teachers strategically.
Enhance school management	Review national, regional, district, and school-level allocation and spending procedures. Develop incentives for budget holders to increase efficiency, especially in relation to teacher deployment and other major cost drivers. Review conditions of service. Limit penalty-free casual leave. Reward continuous teacher attendance with bonuses. Increase student learning time through better classroom management and pedagogy. Monitor time on task through school and district supervision systems

A Further paper by the same author:

**Lewin, K. 2007, Expanding Access to Secondary Schooling in Sub-Saharan Africa: Key Planning and Finance Issues. *Create Pathways to Access. Research Monograph No. 8***  
[http://www.create-rpc.org/pdf\\_documents/PTA8.pdf](http://www.create-rpc.org/pdf_documents/PTA8.pdf)

**Mingat, A. 2004, *Issues of financial sustainability in the development of Secondary Education in Africa*. Presented at the Donor Conference on SEIA, held at the Vrije Universiteit Amsterdam (VUA) 2004.**  
[http://siteresources.worldbank.org/INTAFRREGTOPSEIA/Resources/mingat\\_main.pdf](http://siteresources.worldbank.org/INTAFRREGTOPSEIA/Resources/mingat_main.pdf)

The author argues that very few countries can reasonably expect to expand their secondary education substantially based on current national public financing complemented by external assistance. In face of these very serious constraints, several options may be considered:

- Increasing government resources in the following ways: (i) by raising the share of government revenues allocated to the sector to more than 20 percent and (ii) by devoting the additional resources thus released, on a priority basis, to the development of secondary education. This has been done in some countries, such as Rwanda (23 percent of revenues allocated to the sector) and Mauritania (25 percent)
- Reducing the unit costs of schooling without changing the content or form currently prevailing in the two cycles of secondary education. The unit cost observed varies considerably from one country to another. This observation suggests that while the lower values may be insufficient to deliver the desired quality of educational services, there is also a strong suspicion that the higher values are somewhat exaggerated.
- Modifying the content and/or the form of secondary education. This would be useful particularly for lower secondary, which could gradually be integrated in a basic education cycle covering 9 or 10 years. In this new context, one could no doubt imagine modes of organisation closer to those used at the primary level (considerable reduction of teacher specialisation and/or or length of service of teachers comparable to that of primary level) with potentially significant consequences in terms of reducing unit cost. Note also that the length of studies from the beginning of primary to the end of the second secondary cycle varies among the African countries (from 11 to 13 years).
- Lastly, consideration could be given to changing the financing structure for secondary educational services; that might work for the two cycles, but possibly under different modalities. For the first cycle, the role of communities could be taken into account, while for the second cycle the role of private education could be studied. At the upper secondary level, increased private financing could help regulate student flows to keep them in line with the demand for educated workers on the part of national economies. These measures also have implications, of course, in terms of the decrease in amount of government resources needed for secondary education.

Ohba, A. 2011, *The abolition of secondary school fees in Kenya: Responses by the poor. International Journal of Educational Development* 31 402–408  
[http://ac.els-cdn.com/S0738059311000101/1-s2.0-S0738059311000101-main.pdf?\\_tid=f37bfc6e-6f90-11e2-8b43-0000aacb35e&acdnat=1360068092\\_9a72544bcf071e843641299cd9408e93](http://ac.els-cdn.com/S0738059311000101/1-s2.0-S0738059311000101-main.pdf?_tid=f37bfc6e-6f90-11e2-8b43-0000aacb35e&acdnat=1360068092_9a72544bcf071e843641299cd9408e93)

The Government of Kenya abolished secondary school fees in 2008. In the context of this significant change in policy, this study examines the effect of fees on transition to secondary schooling by following 109 primary school leavers in rural Kenya after the fee abolition, starting in 2007. The study draws on survey data with multiple interviews and finds that the abolition of school fees had limited effects on children from low-income families. The study concludes that although there is a high demand for secondary education in general, whether primary school leavers from low-income families actually enrol in fee-free secondary education depends largely on other direct costs and opportunity costs and their perceived economic returns from such education.

Haji, L. T. 2000, *Efficient and equitable expansion of secondary education through cost recovery and cost sharing in Malawi*. Ph.D. thesis Institute of Education, University of London, London  
<http://bit.ly/XO74Nd>

This study examines the issues of educational equity and efficiency raised by Malawi's planned widening of access to secondary schooling. The Malawian system is financed primarily by the government and only very low user charges are imposed. The author argues that increasing charges, with certain measures to protect the poorest, would have the effect of increasing both efficiency and equity in the secondary education system. Literature on 'rates of return', 'efficiency' and 'equity' in educational investment and on 'cost benefit analysis' are reviewed with an emphasis on the rationale for beneficiaries to contribute towards the costs of their educations.

Because government budgets are very limited and the demand for secondary education in Malawi is strong, the author argues that high subsidies limit educational expansion thus limiting access and curtailing equity and efficiency. A few benefit disproportionately from gaining access but many who would have otherwise benefited are excluded due to limitations of government finance. The study suggests that educational opportunity should be expanded and its 'price' raised towards the point at which it equates to marginal cost (a condition of productive efficiency in economics). 'Cost recovery' and/or 'cost-sharing' is advocated as a means towards this end. Using projected enrolment figures for 2009, the author identifies an urgent need to make more places available in secondary education in Malawi but notes that macro-economic conditions put such an expansion beyond the means of the public purse. Specific measures are recommended including user charges, 'de-boarding' by making schooling available more locally, encouragement of private schools, reductions in subsidies to higher education and increased community participation in school construction and staffing.

#### **Resources with a focus on Asian Countries**

Ahmad, Q. 2007, *Bangladesh: Summary Report. Financing Primary and Secondary Education in Bangladesh*. Asia-South Pacific Education Watch; Asian South Pacific Bureau of Adult Education  
[http://www.eric.ed.gov/ERICWebPortal/search/detailmini.jsp?\\_nfpb=true&\\_ERICExtSearch\\_SearchValue\\_0=ED533595&ERICExtSearch\\_SearchType\\_0=no&accno=ED533595](http://www.eric.ed.gov/ERICWebPortal/search/detailmini.jsp?_nfpb=true&_ERICExtSearch_SearchValue_0=ED533595&ERICExtSearch_SearchType_0=no&accno=ED533595)

This paper identifies that low public expenditure on primary and secondary education in Bangladesh, and the consequent use of private tutors, aggravates educational inequalities. It calls for increased public expenditure to increase the quality of educational provision.

The main objective of the study was to gain an understanding on educational expenditure at primary and secondary levels in Bangladesh. It revealed that public spending on primary and secondary education remains low in comparison with other developing countries and insufficient to ensure acceptable quality. It was evident that very little was available for quality inputs, such as, provision of teaching aids, training and supervision of teachers, provisions for libraries and laboratories. Nor were enough resources to provide for an adequate number of teachers, classrooms and a manageable class size (rather than a primary class of over 50 students and over a 100 in some secondary classes). The meagreness of resources was partially mitigated by household spending on education. Of total spending per child in government primary schools and government assisted secondary schools--the most numerous type of institution in each category--59 percent and 71 percent respectively came from household sources. Cost of private tutors was the single largest item of household expenditure. Forty-three percent of government primary school students and 85 percent of government-assisted secondary school students had private tutors. Household costs for education and dependence on private tutoring clearly aggravated educational inequity. Household spending on education per child of the lowest socio-economic quintile at both primary and secondary levels was less than half of the spending of the topmost quintile. A policy reorientation and consequent increase in public resources for education and changes in the budgetary allocation pattern in favour of the poor and the disadvantaged are called for.

**Siddhu, G. 2010, Can Families in Rural India Bear the Additional Burden of Secondary Education? Investigating the Determinants of Transition. *CREATE Pathways to Access. Research Monograph No. 50***  
<http://www.eric.ed.gov/PDFS/ED517692.pdf>

This paper identifies the additional cost as the most significant factor in parents' decision-making regarding whether to send their children to secondary school in a rural district of India.

India has witnessed a major expansion in participation in basic education in recent years. Despite a significantly improved picture at the basic level, a considerable proportion of children continue to drop out before reaching the secondary level. Over half of children who enrol in grade one do not make it to grade eight, and of those who do complete their basic education (grades one through eight), only 88 percent go on to participate in secondary schooling. Problems surrounding retention are more acute in rural areas of India, and as the country is a predominantly rural society, this study focuses on a farming district of Uttar Pradesh. It investigates the factors influencing parents' decision whether or not to send their children to secondary schooling. The study focuses on four key aspects in parental school decision making: incentives leading parents to view investment in education as worthwhile; the cost of secondary education; distance to secondary schools; and the impact of health-related factors. Overall the effect of additional cost is the most consistently significant factor. With regard to the increase in cost involved in transition even when considering the cheapest option available (transitioning from government primary school to private aided secondary school) the cost increases by 2.5 times, meaning a swift and substantial increase in the education cost burden of the family. This can be seen to affect poor families the most, as the increase in cost from private unaided primary to the same type of secondary (while this sector is more expensive to begin with) is only 1.5 times. This relationship is compounded by the fact that poorer families tend to have larger family sizes thus leaving them with no option but to prioritise the education of some children within the family, often boys.

**Lewin, K. 2011, Expanding Access to Secondary Education: Can India Catch Up? *International Journal of Education and Development*, 31 (4). pp. 382-393**  
[http://ac.els-cdn.com/S0738059311000083/1-s2.0-S0738059311000083-main.pdf?\\_tid=86479e50-6f90-11e2-8b43-00000aacb35e&acdnat=1360067909\\_7b47a0d33abff2e9dc7edaa392d5ebe2](http://ac.els-cdn.com/S0738059311000083/1-s2.0-S0738059311000083-main.pdf?_tid=86479e50-6f90-11e2-8b43-00000aacb35e&acdnat=1360067909_7b47a0d33abff2e9dc7edaa392d5ebe2)

In the last decade the national Sarva Shiksha Abhiyan (SSA) programme has focussed on providing universal access to elementary education (Grades I–VIII). Most recently the Right to Education Act provides the legislative framework to guarantee schooling to all children between 6 and 14 years of age. It remains the case however that less than half of all children attend and complete secondary school especially in the Northern states. Under the 11th National Plan Rastriya Madhyamic Shiksha Abhiyan (RMSA) has been launched to increase the numbers entering secondary school. This paper explores some of the key issues in planning and managing the growth in participation that is envisaged so that 75% or more enjoy the benefits of transition to Grades IX and X. The issues include the constraints on expansion that arise from the restricted output of elementary school graduates, the continued exclusion of the poorest and those from disadvantaged groups from progression to Grade VIII, the costs to households and government of universal secondary schooling as currently structured, the limits to growth of private provision, the massive infrastructure needs, and the problems associated with increasing teacher supply and deployment. Policy dialogue around secondary school expansion is a central concern if India is to close the gap between itself and China and other rapidly developing countries in educating most of its population beyond the elementary level.

## 6. Infrastructure

**Glewwe, P. et al. 2011, School resources and educational outcomes in developing countries: A review of the literature from 1990 to 2010. NBER Working Paper 17554.**

<http://www.nber.org/papers/w17554>

This paper examines studies published between 1990 and 2010, in both the education literature and the economics literature, to investigate which specific school and teacher characteristics, if any, appear to have strong positive impacts on learning and time in school. Key findings include:

- The evidence gives fairly strong support to the proposition that providing electricity to schools increases student learning.
- The evidence suggests that adequate amounts of desks, tables and chairs raise student test scores, as common sense would suggest.
- Evidence strongly suggests that textbooks and similar materials (workbooks, exercise books) increase student learning.
- School libraries also appear to have generally positive impacts on student learning as measured by test scores (although they are expensive).
- Positive effects on education are found for general indices of school “infrastructure” and for blackboards (and other visual aids)
- High quality walls, roofs and floors appear to lead to better outcomes

**Ayeni, A. & Adelabu, M. 2012, Improving learning infrastructure and environment for sustainable quality assurance practice in secondary schools in Ondo State, South-West, Nigeria. *International Journal of Research Studies in Education*: 1 (1)**

[http://www.google.co.uk/url?sa=t&rct=j&q=&esrc=s&source=web&cd=8&ved=0CGIQFjAH&url=http%3A%2F%2Fwww.consortiacademia.org%2Findex.php%2Fjrse%2Farticle%2Fdownload%2F20%2F16&ei=4eQQUYL500eb1AXi0oGoAQ&usq=AFQjCNE\\_34tP6AP3Wn\\_gmOlln\\_5IWourUw&bvm=bv.41867550,d.d2k](http://www.google.co.uk/url?sa=t&rct=j&q=&esrc=s&source=web&cd=8&ved=0CGIQFjAH&url=http%3A%2F%2Fwww.consortiacademia.org%2Findex.php%2Fjrse%2Farticle%2Fdownload%2F20%2F16&ei=4eQQUYL500eb1AXi0oGoAQ&usq=AFQjCNE_34tP6AP3Wn_gmOlln_5IWourUw&bvm=bv.41867550,d.d2k)

This study uses a descriptive survey design paradigm to examine the state of the learning environment in secondary schools in Ondo State, Nigeria. Infrastructure in this context refers to the school site, building, furniture and equipment. It is suggested that the quality of infrastructure and learning environment has strong influence on the academic standard which is an index of quality assurance in the school. However, many facilities in most Nigerian public schools are dilapidated and inadequate to provide quality education service delivery.

Improving learning facilities will not only boost the morale of teachers and students but will also improve educational outcomes.

The location of the school may to an extent determine the academic standard. Ideally, schools should be located where it is accessible and far from disturbance of markets, highways, airports and industries and free from filth and pollution.

The evidence revealed that deficiencies in learning infrastructure and environment constituted impediments to effective classroom management, curriculum delivery and the full realisation of secondary education objectives in Nigeria. It was concluded that the school and other stakeholders in education should collaborate and contribute towards the development of learning infrastructure and environment, so as to create a more conducive working environment for a sustainable high-quality education assurance practices in secondary schools.

**Ayeni, A. 2001, Teachers' Professional Development and Quality Assurance In Nigerian Secondary Schools. *World Journal of Education* 1 (2)**

<http://www.google.co.uk/url?sa=t&rct=j&q=&esrc=s&source=web&cd=2&ved=0CDcQFjAB&url=http%3A%2F%2Fwww.sciencedirect.com%2Fjournal%2Findex.php%2Fwje%2Farticle%2Fdownload%2F468%2F235&ei=xfAQUZzhEY3Z0QXXmYDoCQ&usq=AFQjCNEy5EHggFTZXEfw5OZTxqE92qqCQg&bvm=bv.41867550,d.d2k>

This paper examines teaching experience in Nigeria through a descriptive survey. It found that teachers felt that their work was hampered in part by the poor condition of infrastructure, which had a negative impact on students' learning. To address this challenge, the teachers suggested an improvement in their working environment.

**Earthman, G. 2002, School facility conditions and student academic achievement. *Williams Watch Series: Investigating the Claims of Williams v. State of California*, UCLA's Institute for Democracy, Education, and Access, UC Los Angeles.**

<http://www.escholarship.org/uc/item/5sw56439#page-1>

Although this study focuses on schools in America, its findings are relevant to schools in developing nations. It is concluded that school facility conditions do affect student academic achievement. Specific findings include:

- School building design has measurable influence upon student learning. Room temperature, lighting, acoustics and age all have an impact.
- Students who attend a school with substandard buildings are likely to suffer reduced academic achievement.
- Poor school facilities negatively impact on teacher effectiveness and performance, and therefore have a negative impact on student performance.
- Too many students in schools compared to its capacity (overcrowding) will have a negative influence upon teachers and students (especially on minority students or students from less privileged backgrounds).

Research indicates strong links between the built environment and student performance. The strength of that relationship varies, but the weight of evidence supports the premise that a school building has a measurable influence on student achievement.

**Gibberd, J. 2007, *South Africa's School Infrastructure Performance Indicator System*. OECD**

<http://www.oecd.org/education/educationeconomyandsociety/centreforeffectivelearningenvironmentscele/38601532.pdf>

In South Africa, Apartheid policies have left a legacy of poor school infrastructure in what were formerly black areas and infrastructure is good in what were formerly white schools. The

school infrastructure performance indicator system (SIPIS) project offers an approach that can address both the urgent provision of basic services as well as support the development of more sophisticated and more effective education environments over time.

For those working or studying in schools to perform well, the following needs to be considered:

- Infrastructure: Infrastructure should be able to inherently perform well. This includes ensuring that buildings are weather tight, structurally sound, have low operating costs, and are spatially and resource efficient.
- Programme: Infrastructure should effectively support the activities that it is required to accommodate. For instance, school buildings should accommodate the current curriculum and preferred modes of teaching and learning.
- People: Infrastructure should allow users to be comfortable, healthy and productive and should meet users' basic needs. It should also guarantee that human rights are respected.

**World Bank. 2002, *Secondary Education in Africa: Strategies for Renewal*. Africa Region Human Development Working Paper Series. World Bank presentations at the December 2001 UNESCO/BREDA-World Bank Regional Workshop in Mauritius on the Renewal of African Secondary Education**

[http://siteresources.worldbank.org/INTAFRREGTOPEDUCATION/Resources/444659-1220976732806/Secondary\\_Education\\_Strategies\\_renewal.pdf](http://siteresources.worldbank.org/INTAFRREGTOPEDUCATION/Resources/444659-1220976732806/Secondary_Education_Strategies_renewal.pdf)

In most African countries, secondary education is facing three common problems: (a) inadequate infrastructures, (b) improper equipment, and (c) limited laboratories and qualified staff. Poor infrastructure may limit the teaching of specialist subjects. For example, science lessons may be limited without adequate laboratories.

Education experts would agree that the basic conditions for good education include appropriate school buildings and ample classrooms. However, teaching materials and teacher training is also needed. Many projects focus on infrastructure at the expense of the other two aspects. Attainment, success and transition, monitoring of school education and resources and structures are the four areas used to indicate the quality of education. Under the resources and structures category, several key aspects of infrastructure which underpin school performance and pupil success could be included. These could be "educational expenditure per student," "education and training of teachers," "participation rates in pre-primary education" and "number of students per computer.

**Condie, R. et al (2007) *The impact of ICT in schools – a landscape review*. University of Strathclyde for BECTA, Coventry, UK**

<http://webarchive.nationalarchives.gov.uk/20101102103654/publications.becta.org.uk/download.cfm?resID=28221>

This report focuses on ICT on the schools sector across the United Kingdom. ICT will become increasingly important in schools in developing countries and therefore this summary was included. The results indicated that the development of ICT in schools is progressing unevenly across and within schools and technologies. The overwhelming message from the research is that most pupils and teachers have found the introduction of ICT into the classroom a positive development, motivating pupils and teachers alike and changing radically the learning experiences of both for the better. The literature contains a great deal of persuasive argument that ICT is valuable in improving learning, teaching, motivation and achievement, although the volume and consistency of evidence tends to lead to tentative conclusions rather than firm ones.

**Glewwe, P., Kremer, M. & Moulin, S. 2009. Many Children Left Behind? Textbooks and Test Scores in Kenya. *American Economic Journal: Applied Economics* 1, no. 1: 112-35.**

<http://www.povertyactionlab.org/publication/many-children-left-behind-textbooks-and-test-scores-kenya>

A randomised evaluation in rural Kenya finds, contrary to the previous literature, that providing textbooks did not raise average test scores. Textbooks did increase the scores of the best students (those with high pre-test scores) but had little effect on other students. Textbooks are written in English, most students' third language, and many students could not use them effectively.

## 7. Case studies

### Quality

#### Case study 1 – Universal Secondary Education (USE) in Uganda

**Chapman, D., Burton, L. & Werner, J. 2010, Universal secondary education in Uganda: The head teachers' dilemma. *International Journal of Educational Development* 30 77–82**

<http://www.sciencedirect.com/science/article/pii/S073805930900100X>

As of 2010, Uganda was the only African country to adopt a policy of free universal secondary education (USE). Prior to this, Uganda was an early adopter of universal free primary education (UPE) - its experience offers a cautionary tale regarding quality of education for its move to USE. The UPE policy was successful in increasing access; primary enrolments increased from 2.8 million in 1997 to 7.6 million in 2004 (MOES, 2005). Net enrolment rates for primary schooling increased from 62.3% in 2000 to 91.4% of girls and 95.3% of boys in 2007. Yet, while enrolment increased by 171% during this time, the number of teachers and schools increased by only 41%. Enrolment grew faster than new teachers could be recruited and trained, schools built, and textbooks procured and distributed. Primary school head teachers were faced with burgeoning enrolments, declining teacher qualifications, and higher teacher workloads. Maintaining morale was a challenge. Access rose but quality suffered.

With this information on UPE available, the authors argue that USE was only universal in name. Neither the finances nor the human resources were available to offer secondary education of an adequate quality to everyone. With the promise of USE, the Uganda government was pursuing multiple incompatible goals intended to serve both political and educational ends. The question remains how to implement USE to address access, without diluting the quality of learning outcomes.

As the first sub-Saharan country to adopt a policy of USE, Uganda has an opportunity to provide a model for other countries seeking to adopt a similar policy in the future. Is the aspiration of USE useful? How can a country effectively balance the challenge of enrolment and quality? What indicators should be used to verify quality in secondary education?

### Curriculum

#### Case study 2 – The Curriculum, Assessment and Examinations Reform (CURASSE) programme, Uganda

**McRory, M. 2012, Lower Secondary Curriculum Assessment and Examination Reform Programme, National Curriculum Development Centre, Uganda**

<http://www.curasse.ncdc.go.ug/files/Curriculum%20Situation%20Analysis%20Report.pdf>

This report discusses the basis for reform and identifies factors and weaknesses stemming from past decades when the secondary school system catered only for the elite minority of intellectually able students. The system limited access to secondary school by use of a rigid rote-learning based paper and pencil examination system which crudely selected the proportion of students to be accommodated by the available places.

The reform is focussed on providing an appropriate, competence developing educational experience for the wide ranging ability group now entering the general lower secondary four year programme under the government's universal secondary education initiative.

Some characteristics the reform will attempt to ameliorate are:

- A curriculum largely unchanged since the era of subject content set by external examination bodies;
- Learning programmes overloaded with content to be rote learned;
- Large number of traditional subjects in the compulsory core, with a long list of electives which can be offered by only a few schools;
- Textbooks which entrench the rote-learning culture by having pages of text devoid of illustrations, activities or assessment assignments;
- Teaching styles which are almost entirely teacher centred and focused on chalkboard copying of bodies of fact-centred material for subsequent regurgitation in high-stakes examinations;
- A pass/fail, norm-referenced UCE (Uganda Certificate of Education/ o-level) assessment regime, testing mainly the lower end of the cognitive domain and a narrow range of competencies, and that is not appropriate for the wider range of abilities now in secondary schools;
- Classroom learning environments which are almost universally devoid of any motivational material or tangible learning resources;
- A student learning experience that does not afford students the opportunity to acquire the spectrum of skills and competences so essential for life success in a country faced with vast social, economic and environmental change, and a rapidly changing communications world in which young people do not accept the givens of earlier generations, and require the tools to become global citizens

A range of crucial implications for the reform process are summarised:

- The need for a curriculum and assessment regime which caters appropriately for all ability levels
- The need to ensure that learners acquire the spectrum of Generic Skills for success in life
- The important role played by properly designed interactive textbooks
- The demand for a consultative consensus on the Lower Secondary Curriculum Framework, with the acquisition of Generic Skills at its core
- A range of Learning Area programmes of study with an implicit pedagogy of learner centred-ness and life orientation
- The importance of the Guidance and Counselling dimension, particularly at the S13 and S4 levels
- The need to specify learning expectations commensurate with a wide ability range.

Challenges in driving the reform forward include: the need for secondary sub-sector co-ordination, the need to determine what form technological subjects should take in a reformed curriculum scenario; and reform of initial teacher education programmes.

## **Financing**

### **Case study 3 - Financing the expansion of secondary education**

Lewin, K. 2011, **Expanding access to secondary education: Can India catch up?** *International Journal of Educational Development* 31, 382–393  
[http://ac.els-cdn.com/S0738059311000083/1-s2.0-S0738059311000083-main.pdf?\\_tid=86479e50-6f90-11e2-8b43-00000aacb35e&acdnat=1360067909\\_7b47a0d33abff2e9dc7edaa392d5ebe2](http://ac.els-cdn.com/S0738059311000083/1-s2.0-S0738059311000083-main.pdf?_tid=86479e50-6f90-11e2-8b43-00000aacb35e&acdnat=1360067909_7b47a0d33abff2e9dc7edaa392d5ebe2)

In India as a whole, though initial enrolments rates in the first grade are generally high, 60% do not finish Grade X (lower secondary). In northern India in the BIMARU states (Bihar, Madhya Pradesh, Rajasthan, and Uttar Pradesh) most of the population have no secondary schooling. This paper discusses the factors supporting the expansion of secondary education in India and further action needed to achieve the government's target of 75% participation in lower secondary schooling:

- National Policy: By 2007 the new 11th Five Year Plan included a new programme designed to universalise access to secondary schools called Rastriya Madhyamic Shiksha Abhiyan (RMSA).
- Increased investment at national and state level: The 11th Plan included very substantial resource allocations to support the expansion of lower secondary schooling. It provides for an increase in capacity of about 6 million places. To reach 75% would require an additional 15.5 million students at lower secondary level so further investment will be needed to reach this target. Currently the education system requires 3.7% of GDP to finance. If the model is adjusted to increase average participation rates to 75% at secondary and 50% at upper secondary the result is to increase the expenditure needed to 4.5% of GDP. An overall national target for educational expenditure of 6% of GDP has existed at national level since the 10th Five Year Plan but this has not been implemented in the past. States have responsibility for delivering most secondary schooling. Spending on secondary schooling will need to be over 2% of state GDP in most low enrolment states and this represents a substantial increase in most.
- Reforms to increase efficiency and reduce costs per student: Reforms that result in efficiency gains are needed to lower costs per graduate and to increase time on task, reduce absenteeism, improve teacher productivity and achievement of learning outcomes.
- Greater numbers completing primary education: Of the 50% of the age group who reached Grade VIII, between 85% and 90% made the transition into lower secondary Grade IX across India as a whole. Until greater numbers succeed in completing Grade VIII successfully, growth in secondary education will be constrained.
- Subsidies for poor households with secondary age children: Participation in secondary schooling in India is limited by household income as the direct and indirect costs of schooling remain substantial. More expansion will be possible by directing subsidy to the poorest and retaining fees at levels that recover a significant part of the costs for those in higher income quintiles.
- Increased participation of marginalised groups: Increased capacity will need to be provided at least in the ratio of 3:2 in favour of girls to approach gender parity. Similar preferences will have to be given to Scheduled Castes and Scheduled Tribes and other marginalised groups to achieve participation at levels that reflect their share of the population.
- Increased numbers of teachers: The number of teachers needed at the secondary level will more than double if the goal of 75% participation is to be achieved. Increased numbers of teachers will need to be trained to meet this need.

## **Infrastructure**

### **Case study 4 – South Sudan Education Programme**

**DFID. 2012, *South Sudan Education Programme, Construction & Rehabilitation of Education Facilities – Construction review.* HEART website**  
<http://www.heart-resources.org/2012/03/dfid-south-sudan-education-programme-construction-rehabilitation-of-education-facilities/>

The South Sudan Education Programme (SSEP) is a three year project that started in March 2011. Implementation of the programme is divided into two components. One component is the construction of 4 secondary schools. One of the key recommendations was that the orientation of the school building was considered to reduce solar gains. How might other non-physical aspects of secondary school construction impact on educational experience?

#### **Case study 5 – Rwanda’s Child-friendly schools infrastructure standards and guidelines**

**Rwandan Ministry of Health, 2009, *Child Friendly Schools Infrastructure Standards and Guidelines.* Rwandan Ministry of Health, Rep. Of Rwanda.**  
<http://sheltercentre.org/sites/default/files/Rwanda%20Child%20Friendly%20Schools%20Infrastructure%20standards%20and%20guidelines.pdf>

**UNESCO, Rwanda’s Child-friendly schools infrastructure standards and guidelines.**  
<http://www.unesco.org/new/en/education/themes/strengthening-education-systems/quality-framework/promising-practices/rwandas-child-friendly-schools/>

In acknowledgement of the importance of infrastructure on educational outcomes, the Rwandan Ministry of Education developed a set of guidelines to ensure the physical environment in schools. The document named “Rwandan Education Quality Standards 2008” seeks to harmonise the country’s understanding of what an acceptable school infrastructure is. The standards and guidelines provide a comprehensive framework that is to be referenced by all who are involved in the planning, monitoring, designing, procuring, constructing and rehabilitating school infrastructures. The document was developed after extensive consultation involving a range of stakeholders, multiple site visits and research into the relevant literature.

The guidelines are based on four key principles:

- A school must have appropriate, sufficient and secure buildings
- A school must be a healthy, clean, secure and learner protecting environment
- A school must have a child-friendly, barrier free environment which promotes inclusive access and equal rights of every child
- A school must have adequate and appropriate equipment that support level of education

The six key dimensions that schools must consider are as follows:

1. Inclusive of children – Respect diversity, guarantees opportunities to meet the needs of children (based on vulnerabilities, social class and ability level).
2. Secure and protective – Helps defend children from abuse and aggression, promotes psycho-socio-emotional wellbeing of teachers and learners.
3. Healthy – assure proper hygienic conditions through adequate water and sanitation facilities, implementation of healthy practices.
4. Effective with children – uphold good teaching and learning processes, define quality learning outcomes, and provides approved content, materials and resources, support teachers’ capacity commitment, income and their recognition of child rights.
5. Sensitive to gender – advocate gender equality in enrolment and success, guarantees girl friendly facilities, environment and teaching, promote respect for others rights and dignity.

6. Involved with communities – works to strengthen families, helps stakeholders establish collaborative relationships, works with other actors and duty-bearers to fulfil children’s rights.

Although the document was written and approved for implementation in all primary and *tronc commun* schools in the Republic of Rwanda, many of the principles are arguably relevant for secondary education.

Discuss whether published guidelines are useful to improve and maintain infrastructure in secondary schools. Are the guidelines realistic or aspiration, and if the latter, are they still effective? Are there key differences between the infrastructure requirements in primary schools and secondary schools?

### 8. Other useful resources

The Africa Human Development Department of the World Bank Secondary Education in Africa (SEIA) initiative has many key resources through their portal:

<http://web.worldbank.org/WBSITE/EXTERNAL/COUNTRIES/AFRICAEXT/EXTAFRREGTOP/EDUCATION/0,,contentMDK:21678070~menuPK:4762583~pagePK:34004173~piPK:34003707~theSitePK:444708,00.html#Ov1>

### 9. Additional information

#### Authors

This query response was prepared by Stephen Thompson, Imogen Featherstone & Laura Bolton

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