INNOVATIVE SECONDARY EDUCATION FOR SKILLS ENHANCEMENT (ISESE)

Skills Defined by Curricula: Sub-Saharan Africa

July 5, 2012
Skills Defined by Curricula: Sub-Saharan Africa

PREPARED BY:

Prof. John K. Anarfi
Dr. Ernest N. Appiah
Institute for Statistical, Social and Economic Research (ISSER)
Accra, Ghana

Results for Development Institute (R4D) is a non-profit organization whose mission is to unlock solutions to tough development challenges that prevent people in low- and middle-income countries from realizing their full potential. Using multiple approaches in multiple sectors, including Global Education, Global Health, Governance and Market Dynamics, R4D supports the discovery and implementation of new ideas for reducing poverty and improving lives around the world.

This paper was prepared for the Innovative Secondary Education for Skills Enhancement (ISESE) project, led by R4D with support from the Rockefeller Foundation. For more information on the ISESE project, please contact Michelle Engmann: mengmann@resultsfordevelopment.org.
# TABLE OF CONTENTS

CHAPTER ONE: INTRODUCTION .............................................................................................................. 1  
1.1 Background ................................................................................................................................... 1  

CHAPTER TWO: METHODOLOGY ......................................................................................................... 4  
2.1 Data Sources ................................................................................................................................ 4  

CHAPTER THREE: OVERVIEW OF SKILLS DEFINED BY CURRICULA IN WESTERN AND  
EASTERN AFRICA ................................................................................................................................. 6  
3.1 Introduction .................................................................................................................................. 6  
3.2 General secondary school curricula ............................................................................................... 6  
3.3 Current TVET curricula .................................................................................................................. 8  
3.4 Skills in the current educational curricula ....................................................................................... 10  
3.5 Male-female differences in TVET/secondary curricula .................................................................... 14  
3.6 Private/public TVET/Secondary Curricula ...................................................................................... 15  

CHAPTER FOUR: SITUATION ANALYSIS ON GHANA BENIN AND KENYA ........................................... 18  
4.1 Skills in the current curricula ......................................................................................................... 18  
   4.1.1 Ghana ...................................................................................................................................... 18  
   4.1.2 Kenya ..................................................................................................................................... 18  
4.2 Skills for employment ....................................................................................................................... 19  
   4.2.1 Specific employable skills highlighted in the TVET curricula..................................................... 19  
   4.2.2 Specific male/female employable skills highlighted in the curricula ....................................... 19  
   4.2.3 Specific private/public employable skills highlighted in the curricula .................................... 19  
4.3 Skills emphasized/deemphasized in the secondary schools curricula .......................................... 20  
   4.3.1 Key skills emphasized in the curricula ....................................................................................... 20  
   4.3.2 Key Skills for Employment Emphasized /Deemphasized ......................................................... 21  
   4.3.3 Male-female differences ............................................................................................................ 22  
4.4 Skills necessary to teach and Skills necessary for employment ..................................................... 23  
4.5 Skills secondary age youth have including skills acquired from outside the curricula ............... 26  
   4.5.1 Private versus public ............................................................................................................... 27  
   4.5.2 Skills Acquired From Outside the Curricula ........................................................................... 27  
   4.5.2 African Youth Skills Compared to South Eastern Asian and OECD Countries ..................... 28  

BIBLIOGRAPHY .................................................................................................................................... 31  
Appendix 1: Matrix for data Collection ............................................................................................... 38
<table>
<thead>
<tr>
<th>Abbreviation</th>
<th>Full Form</th>
</tr>
</thead>
<tbody>
<tr>
<td>ADEA</td>
<td>Association for the Development of Education in Africa</td>
</tr>
<tr>
<td>ASDAN</td>
<td>Award Scheme Development and Accreditation</td>
</tr>
<tr>
<td>AU</td>
<td>African Union</td>
</tr>
<tr>
<td>BAC</td>
<td>Baccalauréat</td>
</tr>
<tr>
<td>BEPC</td>
<td>Junior Secondary School Degree</td>
</tr>
<tr>
<td>CEPA</td>
<td>Centre for Policy Analysis</td>
</tr>
<tr>
<td>CEP</td>
<td>Primary School Leaving Certificate</td>
</tr>
<tr>
<td>COTVET</td>
<td>Council for Technical and Vocational Education and Training</td>
</tr>
<tr>
<td>CQP</td>
<td>Certificat de qualification professionnelle</td>
</tr>
<tr>
<td>ETPF</td>
<td>Enseignement technique et professionnel</td>
</tr>
<tr>
<td>GES</td>
<td>Ghana Education Service</td>
</tr>
<tr>
<td>GDP</td>
<td>Gross Domestic Product</td>
</tr>
<tr>
<td>ICT</td>
<td>Information Communication and Technology</td>
</tr>
<tr>
<td>ICT4AD</td>
<td>Information, Communication and Technology for Development</td>
</tr>
<tr>
<td>JHS</td>
<td>Junior High school</td>
</tr>
<tr>
<td>JSAE</td>
<td>Japan Society of Automotive Engineers</td>
</tr>
<tr>
<td>JSE</td>
<td>Junior Secondary Education</td>
</tr>
<tr>
<td>JSS</td>
<td>Junior High School</td>
</tr>
<tr>
<td>LESDEP</td>
<td>Local Enterprises and Skills Development Program</td>
</tr>
<tr>
<td>MOE</td>
<td>Ministry of Education</td>
</tr>
<tr>
<td>NER</td>
<td>Net Enrollment Ratio</td>
</tr>
<tr>
<td>OECD</td>
<td>Organization for Economic Cooperation and Development</td>
</tr>
<tr>
<td>PrEP</td>
<td>Primary Enterprise Program</td>
</tr>
<tr>
<td>QCA</td>
<td>Qualifications and Curriculum Authority</td>
</tr>
<tr>
<td>SHS</td>
<td>Senior High School</td>
</tr>
<tr>
<td>TVET</td>
<td>Technical and Vocational Education and Training</td>
</tr>
<tr>
<td>UNESCO</td>
<td>United Nations Educational Scientific and Cultural Organization</td>
</tr>
<tr>
<td>VOTEC</td>
<td>Vocational and Technical</td>
</tr>
<tr>
<td>WAEC</td>
<td>West African Examinations Council</td>
</tr>
</tbody>
</table>
CHAPTER ONE: INTRODUCTION

1.1 Background

Employable skills are generic or specific competencies that one needs in order to get a job, perform on the job, or keep the job. These skills which are variously defined and categorized generally include thinking skills, analytical and problem solving skills as well as personal skills. These generic skills that cut across a wide spectrum of jobs, comprise a suite of ‘transferable skills’ which are independent of the occupational sectors and organizations in which individuals work and which contribute to an individual’s overall employability by enhancing their capacity to adapt, learn and work independently. They are required not only to gain employment but also to progress within an organization. ‘Often they were called core skills, key skills, transferable skills or general skills that aim at preparing people for the world of work. They typically comprised literacy, numeracy and technical skills’(Whatley et al, 2011: 144). The scope has recently been broadened to include skills such as working with others, presentation, problem solving and managing own learning and that which makes individuals employable.

People with employable skills are capable of getting into self-employment with the skills they have acquired although such skills may not be of high demand in the society (Nikaib, 2009:9). Employable skills are acquired from a broad spectrum of sectors. They are acquired from home, from school and on the job itself. These key skills are acquired in formal or informal, apprenticeships on the job or outside the school. However, given that the secondary school is a terminal point from where students can either progress to higher institutions or branch into jobs, it becomes imperative to understand how these secondary school age youth (15-18 years) are prepared for the world of work, the various institutions that offer these skills, and the content of the curricula from which these skills are derived.

The greatest concerns of employers today are finding the workforces that possess capabilities to work. There is a seeming gap between the skills employers seek and the skills potential workers possess. Employees who possess the requisite employable skills assist the organizations to achieve their targets or objective. There are many benefits for employers when education institutions equip young people with skills that make them functional on the job, because it contributes to employers’ competitiveness, in a very competitive global economy, increase profitability, and economic growth for the organization (Hordyk, 2007 in Cohen, ..... p144; Whatley, et al, 2011)

In Africa, macro-economic shocks have drastically undermined employment. The deflationary structural adjustments made before the 1994 devaluation of the CFA franc had severe effects on the wage sector in the Francophone zone and drove down employment. Today 95% of employment in Benin and 90% in Cameroon and Senegal are in the informal economy. The world financial and economic crisis of 2008 has also been a major threat for employment in developing countries as well as in the developed world (OECD, 2009). The economic situation in Africa has seriously undermined the ability for its youth to get employment. In 2009, the non agriculture unemployment stood at 75% in Africa and 63% in Asia (OECD, 2009).
Globally, there is increased growth of population resulting in many people entering the job market or reaching the working age. Africa has the largest percentage of young people anywhere in the world. Two thirds of the people of sub-Saharan Africa, which total close to 800 million, are less than 25 years old, compared to 30% in Europe (OECD, 2009). Many young people in Africa entering the job market are either not finding jobs or not fitting into certain jobs because they do not have the requisite skills. Secondary education continues to expand rapidly worldwide. Over one-half billion students were enrolled in secondary schools in 2004 worldwide, an increase of more than 60 million students in just five years (UNESCO, 2007). At the regional level, North America and Western Europe have achieved almost universal secondary education, with an average Net Enrolment Ratio (NER) exceeding 90%. Figures in other regions are East Asia and the Pacific 69%, South and West Asia 45% and sub-Saharan Africa 24% (OECD, 2006:7).

African youth face very high unemployment rates at the same time as they could constitute a vast reservoir of talents, skills and opportunity that through smart interventions can be transformed into a productive workforce (African Economic Outlook, 2011, cited in Clark and Palmer, 2011:2). Unemployment in SSA is very high, reaching 18 million in 2003. Between 1993 and 2003 it increased by 32.5% (Adams, 2011:82). The youth, especially those with lower education are bearing the brunt of it (Adams, 2011:84). Countries in West and East Africa such as Cameroon, Nigeria, Cote d’Ivoire, Kenya and Madagascar are worse affected; and this has been made worse by skills mismatch. Whereas mathematics and science are in high demand, humanities are in high supply (Adams, 2011:85).

Much evidence suggests that students with secondary school education increase their chances of formal employment and informal sector livelihoods (Levi, 2008:64). Education is directed towards preparing the individual to make proper personal and social adjustment to his environment. This implies that education should make the individual useful to himself and the society in which he serves (Annor, 1995). It is particularly important for the secondary age youth - 15 to 18 year olds, who are yet to enter into the job market to be well equipped with employable skills to enable them function effectively in the world of job. Levi (2008:64) has observed that many unfilled jobs require education and training above the primary level, and that balanced growth is needed that is linked to learning outcomes that are economically relevant. ‘Secondary education and training is also increasingly recognized as an indispensable tool for providing adolescents with not only employable skills but also key skills and competencies to become productive citizens, capable of leading healthy lives and contributing to development in their communities’ (Vespoor, 2008:75).

Colonial education which was bequeathed to African countries stressed grammar type that produced middle level clerical and administrative personnel. The curricula therefore stressed language, arithmetic, accounting and general knowledge. Little attention was paid to science and vocational knowledge (Holsinger& Cowell, 2000: 17). Many countries, especially in the developing countries in Africa, East Asia, Latin America and the Caribbean, are now trying to figure out how to position secondary education to better serve the needs of the youth and the development of their countries as a whole relating to employment and the skills needed to function in them (Holsinger and Cowell, 2000). Thus the role of schools in passing on these skills to the youth is therefore very important. Consequently the priority should be ensuring the
relevance of curriculum content so that students can graduate with the knowledge, skills, and attitudes that will allow them to function effectively in a rapidly changing world economic and social environment (Vespoor, 2008:76). The ability of the secondary schools to deliver these essential employment skills to the youth hinges to a large extent on the effectiveness and appropriateness of their curricula content.
CHAPTER TWO: METHODOLOGY

This report provides an overview of the skills that are currently emphasized by secondary school curricula and educators in Sub-Saharan Africa. There are three sections to the report:

i. a catalogue of skills as they are defined by curricula in each sub-region, including both academic and vocational curricula;
ii. skills that secondary school educators think are necessary to teach; and
iii. skills that secondary school students currently have.

The study covers both Francophone and Anglophone sub-regions, with a broad overview on Benin, Burkina Faso, Senegal (Representing Francophone countries) and Ghana, Kenya, Tanzania, and Uganda (Representing Anglophone countries). A deep dive study focuses on Benin, Ghana and Kenya. The study is mainly exploratory.

The core research questions answered in the report include:

1. What skills are included in curricula currently taught to secondary school students in the region(s)?
2. What are the specific skills highlighted in the curricula that may be particularly helpful in preparing students for employment?
3. How do these curricula compare to that in OECD countries and East Asia? Are there any key skills that are emphasized / deemphasized in the curricula examined in the focus countries?
4. What skills do educators believe are necessary to teach to students? What skills do educators believe are most necessary for employability? Of these, which are included in current curricula and which are missing?
5. What skills do secondary school-aged youth in the region currently have? To provide a comparison, how does this compare to OECD countries and East Asia? What skills do students have that may have been gained outside the formal education system?

2.1 Data Sources

Given the time constraint and limited financial resources, data used for this report came mainly from secondary sources. The methods used to gather data included the following:

- Review of research, surveys, and other data available from previous comprehensive regional or country-specific studies on secondary school curricula;
- Review of country-specific curricula or curriculum guides as provided by education ministries or other oversight bodies;
- Review of international and regional tests to understand the skill-sets currently owned by secondary school-aged youth;
- Interviews with educators and school administrators;
- Consultations with local partners, NGOs and agencies implementing programs in this area.

A Matrix for Data Collection was developed to guide the data collection exercise (See Appendix 1).
To be able to answer research question 4 in particular, and 5 to some extent, an instrument was developed to elicit information from educators and other stakeholders (See Appendix 2). The in-depth interview style technique was used to elicit information from the key informants. The conversations were tape-recorded and later transcribed. The resultant data therefore were basically qualitative, which were processed mainly by quick content analysis.
CHAPTER THREE: OVERVIEW OF SKILLS DEFINED BY CURRICULA IN WESTERN AND EASTERN AFRICA

3.1 Introduction
The curriculum is a fundamental component of any educational process. It sets the parameters and gives directions to the educational process. It addresses questions such as what students should learn and be able to do, why, how, and how well. The educational structures and curricula in African countries were molded after the colonial educational system inherited, where the curriculum was meant to equip people with basic skills for the limited clerical and administrative roles in colonial administration. After independence, these new states retained the curricula. However it failed to address the developmental need of the African countries. Soon, youths from secondary schools could not get jobs to do and at the same time, they could not be self employed. Yet every year, many more youth were coming out of secondary schools. As a result, over the years there have been several attempts to change both the structure of education and the curricula. Several reforms or modifications have been introduced into the curricula. The last curricula revisions date from the early 1980s in Uganda, from 1986 in Zambia, and from 1987 in Ghana (Levi, 2008; 65). Other countries such as Kenya, Benin and Tanzania have all tried in one way or the other to either restructure the education system itself or the educational curricula.

3.2 General secondary school curricula
In 1985, Kenya changed its 7-4-2-3\(^1\) educational system to an 8-4-4\(^2\) system. Under this new system the general secondary school curriculum was expanded to include a number of practical subjects that are vocational in nature with the aim of enhancing the transition of secondary school graduates into the world of work and also offer them the opportunities for further training in relevant post-secondary training institutions (Mwiria, 2002). Under this new curriculum, beginning 2003 the secondary and vocational curricula content had these subjects - English, Swahili, Foreign Languages, Mathematics; the optional courses are Science (physical Sciences, Biological Sciences); Humanities (Geography, History, Government, Religious Education [Islamic, Christian, Hindu], Social Education and Ethics); Applied Education (Agriculture; Computer studies); Industrial Education (Wood Technology, Metal Technology, Power Technology, Electrical Technology); Business Education (Accounts, Commerce, Typing and Office Practice); Home Science (Clothing and textiles, Food and Nutrition); Art; Music; and Physical Education.

---
\(^1\)7 years of basic education 4 years of junior secondary education, 2 years of senior secondary education and 3 years of university education.
\(^2\)8 years of primary education, 4 years of secondary education and 4 years of university education.
Like Kenya there have been significant developments in the structure of Ghana’s education system which now stands at 2-6-3-3-4\(^3\). The curricula of formal education system in Ghana were largely the grammar type. Little attention was given to the instruction of technical and vocational programs. Curricula reforms to correct these imbalances in the educational system thus became very crucial (Archer, 1989). The first major attempt to reform the educational curricula was in the late 1970s. There was also an educational reform in 1987 which was further reviewed in 2007.

Thus at the moment Junior High School (JHS) curricula has been reformed to include pre-vocation and technical subjects. Students therefore offer English, Mathematics, Social Studies, Integrated Science (including Agricultural Science), a Ghanaian Language, Technical, Vocational and Agricultural Education and Training (pre-technical and vocational), French and ICT. Life Skills, Music and Dance and Physical Education are also part of the JHS curriculum. These additional subjects which are not examined externally are meant to prepare the students for life and further studies (CEPA, 2000:16). After JHS, there are two parallel streams- the Senior High School (SHS) made up of General Education and Technical, Vocational and Agricultural Education (TVET) or an apprenticeship scheme (MOE, 2007). The SHS curricula content is made up of four core subjects of English, Mathematics, Social studies and Integrated Science. In addition to the core subjects, every student must offer one of the following course programs: Agriculture, Business, Technical, Vocational, or General Arts or Pure Science. The breakdown is as follows:

**Electives Subjects:**
- General Arts - geography, history, Christian religious knowledge, economics, government, history, Islamic religious knowledge, literature in English, Ghanaian languages, French, ICT, Music;
- Pure Science - physics, chemistry, biology, elective mathematics
- Agriculture – General agriculture, animal husbandry, crop husbandry and horticulture, fisheries, forestry
- Business – Business management, clerical office duties, financial accounting, principles of cost accounting and typewriting.
- Technical – Applied electricity, auto mechanics, building construction, electronics, metalworks, technical drawing and woodwork;
- Vocational – clothing and textiles, foods and nutrition, management-in-living, basketry, ceramics, general knowledge-in–art, graphic design, jeweler, leatherwork, picture making, sculpture, and textiles.
- For the Technical/Vocational/Agriculture Education stream, broad elective areas offered are Building Trades, Business Studies, Electrical Engineering, Hospitality Trades, Mechanical Engineering and Agriculture.

The following sums up the general observation made about the curriculum of the secondary schools system in Ghana:

\(^3\) 2 years of pre-school, 6 years of primary education, 3 years of junior secondary school education, 3 years of senior secondary school 4 years of university education.
“The curriculum for the SHS in the secondary schools system puts more emphasis on the passing of examination to progress to the tertiary or postsecondary institutions. There is less focus, if at all, on employable skills at that level. This is because the students are prepared to pass examination to progress to the next level of education. The curriculum content is more theoretical than practical (M of E, 2010: ii).”

In Benin the post-colonial education of 6 years primary education and 6 years secondary education was reformed by the Marxist government in the mid1970s but it failed and was largely abandoned in the 1980s leading to proliferation of middle schools, junior schools and junior high schools which produced a system with more than two stages. Under the 6-4-3-3-4 system, at the end of the first four years of junior high school, the students have to take the O-level (Brevet d’Etudes du Premier Cycle: BEPC). Then after three years the students have to take the A level (Baccalauréat: BAC) examination. At the end of Grade 13, Benin students have to take the Baccalaureate to open the door for university studies. New curricula that deal with life skills and HIV have been introduced to equip the youth with basic facts about HIV or STI, develop self-esteem, self-confidence, and self-efficacy. These are expected to help the youth acquire practical skills to cope with peer pressure, solve problems, be assertive, negotiate safer sex practices, and develop life plans (Meijer, 2003:119).

Benin also recently reformed its vocational training policy to adjust technical and professional education (enseignement technique et professionnel, ETFP) to urban labour demand. The reform develops practical training in the form of dual apprenticeship (“apprentissage dual”) which alternates theoretical training with practical apprenticeship. A professional certificate of qualification (certificat de qualification professionnelle, CQP) is awarded after 600 hours of training in an education center, delivered every week for one day during a three year apprenticeship including five days of work per week in a business or artisanal workshop. Nine options available are masonry, electricity, plumbing, surface preparation, cycle mechanics, carpentry, refrigeration & air conditioning, sewing & clothing and hair-dressing (OECD).

Senegal’s curricula also has core subjects which include French, and language streams, technical stream, science and technical streams, economy stream, mathematics; physical science; science of life and earth; English, history and geography. And in Tanzania subject choices depend on JSE results. Subjects are combined in this order: history, geography, English; economics, commerce, accountancy, plus basic applied mathematics, physics, geography, advanced mathematics; physics, chemistry, mathematics; chemistry, biology, nutrition; economics, geography, advanced mathematics; chemistry, biology, geography; history, Kiswahili, language.

3.3 Current TVET curricula

In Africa TVET is made up of vocational and technical curricula in secondary schools, vocational and technical schools, technical institutes as well as formal apprenticeships. There are also large informal sector apprenticeships that have no formal curricula. These are targeted mainly at the youth with no formal education as well as school drop outs or those who could not progress to
the formal secondary school level. TVET institutions are found not only in the two regions – West an East Africa - under focus but in the entire sub-Saharan Africa (SSA).

The secondary technical schools provide a strong foundation in science, mathematics, English and elective vocational/technical subjects and prepare students for post secondary institutions. The stress is more on the academic progression than on employment; however it is envisaged that the skills imparted would be useful and applicable in the world of work. The technical institutes emphasize skills training of students to produce competent craftsmen and technicians into specific trades for the world of work and for progression into the polytechnics and other career oriented post secondary institutes. The technical institutes use hands-on training to give a more practical than theoretical skills that are applicable in work situations. Vocational institutes impart skills to trainees in a formal institutional environment to produce craftsmen in specific trades for the world of work but with the possibility of further progression. Apprenticeship training, on the other hand, imparts skills through on the job training under the tutelage of a master craftsman in a formal or informal industry to produce crafts in a specific trades for the world of work (GES 2002: 75).

There are reforms going on in several African countries to streamline the mode of teaching of TVET to make them more useful and realistic to reflect the current global trends and the economic situations confronting the specific countries. West African countries such as Benin, Togo, Senegal and Mali are restructuring technical-vocational education and training (TVET) systems to incorporate traditional apprenticeships, including certification mechanisms (OECD, 2009). In Ghana, nine government ministries run the TVET program in addition to several private entities. Ghana has established an apex body COTVET to oversee the delivery of TVET. Hitherto, there was no single body overseeing the organization and supervision of TVET programs and activities. This had resulted in duplication of activities and lack of harmonized certification and quality.

In Kenya some secondary schools have been vocationalised. The vocational aspect of the secondary school curriculum includes agriculture, business studies, computer studies, home science and industrial education. The business studies segment comprises of accounting, commerce, economics and typing with office practice. The industrial education syllabus includes building and construction, drawing and design, electricity, metalwork, power mechanics and woodwork” (Mwiria, 2002: iv). Computer studies are included in the curriculum of some schools because it potentially opens up employment opportunities and further studies for students (Mwiria, 2002:30).

In the Ghanaian vocational/technical curricula, students who wish to offer vocational program in the secondary schools are required to study the four compulsory core subjects of English, mathematics, social studies and integrated science and then study the following: visual art, graphic design, picture making and any one of the following electives: ceramics, leather works, sculpture, basketry, textiles and jewelry. For the home economics option, students are required to study management–in-living, foods and nutrition, clothing and textiles and any of the following as an elective:general knowledge-in-art or economics. Technical students are to study
Technical Drawing, Physics, Mathematics and one of the following electives: Auto Mechanics, Metal Works, Wood Work, Building Construction and Electronics (Ninkarb, 2009: 22).

The inclusion of the compulsory core courses is premised on the fact that in addition to promoting self-reliance, the teaching of the vocational and technical subjects is meant to prepare learners for further education and training which requires skills and passes in these core subjects. Most of these subjects are therefore taught through a combination of theory and practice (Mwiria, 2002:6).

In Burkina Faso primary school lasts six years and ends with a primary school leaving certificate (CEP). The Secondary school is divided into two cycles: the first cycle (junior secondary school) lasts 4 years and leads to the BEPC degree. The second cycle lasts 3 years and ends with the secondary school leaving degree (Baccalauréat) that corresponds to the A levels (Kouraogo and Dianda, 2004:26). Attempts to reform the educational system to improve quality started in 1962 after independence with some minor changes to the syllabus. In the years 1979-84 a major attempt to reform didn’t succeed. In 2007 however, there was a general educational and curricula reform. Like the other African countries, Uganda has taken the decision to proceed rapidly from a secondary system designed for a small academic elite to one designed for the whole age cohort (Clegg et al, 2007).

In Benin, apprenticeship, i.e. a form of training that structurally combines practical training within a company or an artisan together with theoretical training has been proved to facilitate entry into working life. In Benin, the Bureau d’Appui aux Artisans (BAA) seeks to complete the training of traditional apprentices by working with various trade associations. The BAA links the master craftsmen and apprentices who are members of the trade associations to reputable public or private sector training providers for complementary training. BAA’s role is limited to that of financier and technical adviser while the trade associations implement and supervise the training through activities such as cooperating in the development of new training modules, participating in the selection of trainees, negotiating the instructors’ fees, monitoring the apprentices’ attendance, co-organizing the test at the end of the training and participating in the evaluation of training. Master craftsmen also benefited from the training, especially skills upgrading – but such training took place in the workshop of one of the participating master craftsmen. It should be noted that the concept of complementary training of their apprentices was new to master craftsmen, so they need to be “hooked” to the idea. Public and private sector providers of complementary training need to be well endowed with excellent training equipment and instructors with enhanced technical skills and well adapted teaching methodology. Over the last five years, in Benin, agricultural sciences and technology have attracted less than 7.5 per cent of Students, compared with 63 per cent in administrative. The diplomas awarded are less and less credible due to the poor quality of instruction and persisting biases in the evaluation system.

3.4 Skills in the current educational curricula

The educational curricula are meant to equip the youth with all the necessary knowledge and skills that will make them useful and functional in society. These skills are intended to be used as a basis for further education or for application in a variety of situations or employments. In
the secondary school system, these skills are more generic than specific even though some courses are expected to endow the students with some specific skills and knowledge that are applicable to certain employments or occupations. They are taught in the teaching curricula or through extra curricula activities in school. Increasingly, labor productivity is depending on high-level cognitive skills (such as analysis, problem solving, and communication) and behavioral skills (such as discipline and work effort). Employers are continually demanding these higher productivity skills. Evidence shows that as economies advance, more employers consider skills an important factor on business development; this thus requires an effective system for delivering these skills (World Bank 2010:1).

The educational reforms of Ghana between 1987 and 2007 laid emphasis on making the students employable with skills that will be used to tap the natural resources of the country for development. These are taught through both theoretical and practical orientations that aim at addressing the lapses that existed in the previous educational system. Some of these lapses identified were the inability of school leavers to get employment because the curriculum of the previous educational system was purely academic oriented and had no bearing on producing artisans who could easily create their own jobs to do (Acher, 1987). The school curricula, first and foremost, equip the students with fundamental skills such as literacy, numeracy and technology. In the secondary school curricula, fundamental skills are taught through the four compulsory core courses of English, mathematics, integrated science and social studies. Conceptual skills like personal skills, people-related skills, and business skills are taught with several other courses. This is done through the acquisition of knowledge and understanding of the various courses and their applications. Application of knowledge is related to practice and experiments through the school system. Thus Ghana’s new education curricula are planned to achieve the following objectives:

- to provide diversified curriculum to cater for different aptitudes, abilities, interests, and skills;
- to provide an opportunity for further education and training and introduce students to a variety of relevant occupational skills necessary for national human resource development;
- to understand the environment and the need for its sustainability; and
- to inculcate a sense of discipline and selflessness in students (GES 2002: 60)

Similarly, the objectives of the secondary school education in Kenya are to prepare students to make a positive contribution to the development of society, and to acquire attitudes of national patriotism, self-respect, self-reliance, cooperation, adaptability, and a sense of purpose and self-discipline (Sifuna, 1990). The Kenyan secondary school curriculum was therefore developed with the goals of making it more relevant to the needs of the learners that would offer practical skills that are applicable to a wide range of job opportunities (Norag, 2012).

Like the general secondary school curricula, fundamental skills or core skills transcend technical, vocational or secondary schools courses, streams or options. Every student is therefore expected to be able to acquire these skills through their schooling. However, the
students in the TVET institutions are expected to acquire occupational skills which after their schooling could be put to direct employable use. “TVET involves the study of related sciences and technology, relevant general knowledge and the acquisition of the practical skills, attitudes, understanding and knowledge relating to occupations in various sectors of economic and social life” (GES 2004: 2). One of the most important features of TVET is its orientation towards the world of work and the emphasis of its curriculum on the acquisition of employable skills. The National Vocational Training Institute (NVIT) test process examines on cognitive knowledge, affective understanding, and psychomotor application.

The general secondary school curriculum was not designed to offer the student with specific occupational skills. The vocational and technical components were designed to fulfill that task. Even in that sector, there is more emphasis on the passing of examination and progression to the next academic level than for the students to apply the skills acquired to specific occupations after the secondary school. Meanwhile the creation of the vocational and technical schools was based on the fact that the youth would acquire practical employable skills, which they would use to create income-generating projects and thus meet their economic challenges (Muchira, 2001).

The Kenyan TVET curricula has “a core of generic skills that would aid the graduate to better communicate, work in teams with less supervision, use information technology to access new ways of doing things, promote entrepreneurship education that has become invaluable to those in paid employment or in self-employment...and the ability to be creative, innovative as well as an intrinsic initiative for problem-solving...” (Kenya, 1999:146-147; Mwiria, 2002). These skills are delivered in six major areas of the course or curricula such as;

- the teaching of communication skills (literacy) through the teaching of mother tongue, English, and Swahili languages;
- the development problem solving and analytical skills through the teaching of mathematics;
- the development of scientific outlook through the teaching of integrated science.

The development and acquisition of social and cultural knowledge, skills and attitudes is done through the teaching of social studies, religious education, music and physical education, art, craft and home science (MOE, 1984: 4; cited in Makori, 2005).

The teaching of vocational subjects in the secondary schools is meant to prepare learners for further education and training. Most of the subjects are taught through a combination of theory and practice (Mwiria, 2002:6). Agriculture is expected to promote the acquisition of practical skills and self-reliance in farming. Business Education (Accounting, Commerce, Economics) aims at giving commercial skills, inculcating skills of understanding and appreciation of business operations and economic entities and principles, and its role in Kenya’s development, including the use of economic data. The other business course, Typewriting with Office Practice, is to promote communication and efficient office procedures and typewriting skills. The Computer Studies course is to promote appreciation of computers and the acquisition of skills for using computers now and its future development. The Home Science is to promote self-reliance and the improvement of the quality of life. Industrial Education was structured to give
practical, vocational and technical skills and innovation through the teaching of Building Construction, Drawing and Design, Electricity, Metalwork, Power Mechanics and Woodwork.

An analysis of the curricula of the study countries reveals the teaching of general cognitive skills like literacy, numeracy or scientific literacy, non-cognitive ones like creativity, persistence, reliability or communication and/or more specific, technology or vocation specific ones linked to the job, the work or the workplace.

In Ghana, the teaching of cognitive skills at the secondary school is meant to equip the student with skills to enable him function in the educational system and for world of work. Through the teaching of higher thinking skills and behaviors and principles in problem solving through the application of knowledge, develop analytical thinking skills, develop plans, generate new and creative ideas and solutions, and the use of knowledge in a variety of ways to solve (MOESS 2008).

In both Ghana and Kenya, curricula in English aim at sharpening students’ communicative competencies in listening comprehension, reading comprehension, speaking and writing skills, that is to prepare students to function effectively on their own, in offices and other work situations, in tertiary institutions.

The acquisition of skills in science (physics, chemistry and biology), is based on Knowledge and Comprehension, Application of Knowledge, Experimental and Process Skills. The scientific enquiry skills expected to be acquired are practical and experimental skills, observation, manipulation and classification, drawing, measuring, interpretation, recording, reporting and conducting, experiments skills. Kenya science curricula on the other hand aimed at acquiring skill to communicating subject information in a precise, clear and logical manner; developing an understanding of interrelationships and their environment; applying the knowledge gained; relating and applying relevant knowledge and understanding to situations and settings; observing and identifying features, recording the observation and making deductions; developing positive attitudes and interest and the relevant practical skills; demonstrate resourcefulness, relevant technical skills and scientific thinking necessary for economic development; design and carry out experiments and projects; create awareness of the value of cooperation in solving problems; acquire a firm foundation of relevant knowledge, skills and attitudes for further education and for training in related scientific fields.

The vocational (of Ghana) curricula has moved away from the simple didactic acquisition of “knowledge” to a new position where students will be able to apply their knowledge, develop analytical thinking skills, synthesize information, and use their knowledge in a variety of ways to deal with learning problems and issues in their lives. The focus is most of all, to production of problem-solving and practically oriented persons (MOESS, 2008). For instance students offering textiles are expected to appreciate Basketry as an integral part of historical, social and industrial development and living; develop self-esteem, pride, confidence and patriotism through appreciation of his/her own Basketry products; develop the capacity for creativity and solving problems using indigenous and contemporary techniques, tools and materials in Basketry; develop efficient manipulative, aesthetic and technical skills using tools and materials
to make Basketry articles; acquire perceptual and analytical skills through the processes of self-expressions and communication of ideas and feelings; develop critical thinking and practical skills that assist in harmonizing opposing ideas, contradictions, inconsistencies, artistic communication skills and attitudes for sound human relations (MOESS 2008).

In Kenya TVET, students are expected to acquire manipulative and practical skills, analytical and theoretical skills. The acquisition of practical skills is expected to be acquired through Tools/Equipment/Materials Handling, Observation, Craftsmanship/Artisanship, Perception, Creativity, Communication, Exhibition, Appreciation and Criticism, and the use of memory and imagination.

3.5 Male-female differences in TVET/secondary curricula
Gender disparities in secondary school enrollment are prevalent in Africa with boys constituting the greater number in schools. In countries such as Benin, Côte d’Ivoire, Ethiopia, Guinea, Mali and Togo, fewer than 60 girls per 100 boys are enrolled in secondary education. The traditional ascribed gender occupational differences in African societies also influence the curricula and subsequently the carrier a male or a female may choose to pursue. Female students are more inclined towards life skills and commercial courses, which are referred to as less prestigious and less academically demanding whilst the males are more inclined towards sciences, mathematics, technical or masculine subjects and industrial subjects which many females shy away from.

In Kenya secondary schools, girls who enroll for vocational subjects are more likely to be in agriculture, commerce, home science and typewriting with office practice. Although their representation in computer studies is at par with that of boys, these are pursued in preparation for secretarial jobs where computer literacy is a compulsory requirement these days (Mwiria, 2002: 26). This is a common trend in all the two regions and in other countries as well. Therefore beside the core skills, girls generally take curricula that give them life skills and vocational skills. Fewer girls than boys offer the pure sciences of elective mathematic, physics, biology and chemistry and elective mathematics which are considered to be too academically demanding. Consequently they are less equipped with scientific skills, analytical skills and some problem solving skills.

Gender stereotyping influences the choice of carrier path not only in secondary schools but in TVET where access and participation follow the traditional gender biases. Girls are underrepresented in TVET education generally. In Uganda, women account for less than 15% of TVET enrollment; in Benin and Senegal the proportion is about 30-35%; general enrolment in TVET at the secondary level in Tanzania is 13%. There is however, a gradual rise in the enrollment in TVET in Kenya for girls with the Youth Polytechnics enrolling 50% females in 2004 (Nyerere, 2009: 7). With Ghana on the other hand, female enrollment rate in TVET is encouraging where in 2011, part time and full time enrollment stood at 30.9% and 54.5% respectively (Ghana Education Statistics, 2011). And in Burkina Faso however, there were almost as many girls (49.4 per cent) as boys (50.6 per cent). The females were mainly found in
service-sector occupations and short-term training courses lasting for between two and four years. 6,200 were taking courses in service and industry (World Bank/IBRD 2010).

However, these girls are found mainly engaging in gender related courses. Girls who choose TVET virtually choose professions that are traditionally and typically occupied by women such as hairdressing, secretarial work, health care, hotel work, garment manufacture and home economics, with more physically demanding and prestigious industrial sector jobs such as building, agriculture, mechanics, electricity, engineering reserved for the boys (UNESCO, 2002: 43). In Benin, for example, such girls are derogatorily referred to as following the “c” option of the secondary school curriculum: la serie “c” – couture, coiffure, cuisine! (AU, 2007: 8; AU, 2006: 8). In 2006 out of the 50 students who sat for WAEC’s West African Senior Secondary Examination in Electronics in Ghana only one was a female (WAEC, 2006). Girls’ schools are more likely to offer home science and typewriting with office practice while boys’ schools are more likely to offer industrial subjects and business studies. Computer studies and some business courses, in particular commerce, are however, popular in both boys’ and girls’ schools. Other factors that predispose girls to pursue a particular skill beside the socio cultural norms are economic inequities and lower completion rates for girls as found in Kenya and the other African countries under study (Mwiria, 2002:32; Sutherland Addy, undated: 1; Afeti, 2009).

3.6 Private/public TVET/Secondary Curricula

In Africa both secondary and TVET education are “delivered by both government and private providers, which include for-profit institutions and non-profit, NGO and Church-based institutions” (AU COMEDASA, 2007: 7).

In Ghana there are 720 Secondary schools and out of this there are about 511 public secondary schools and 209 registered private secondary schools. All the schools, both private and public, offer similar curricula designed by the GES and examined by the West African Examinations Council (WAEC), which consist of compulsory core curricula of English, mathematics, integrated science and social studies; and there are streams in pure sciences, business studies, agriculture and general arts as well as the technical and vocational skills. The private and public schools are therefore expected to give to their students the same skills as they are spelt out in the educational policies and the school curricula.

In the TVET private providers are either for profit or not profit. Non-profit private provision, run by international or national NGOs, targets those not reached by the public or private-for-profit training providers such as the poor and the marginalized groups and poor women. They are often provided with integrated skills packages such as post-training support and access to credit (DFID, 2007). For-profit private provision may reduce public spending on skills development (Canagarajah et. al, 2002; DFID, 2007). Private providers rely on self-financing and cost-recovery methods such as fees and selling production or services (Jager and Buhrer, 2007). In general, they provide better quality programs compared to public providers although there is variation of quality among private providers (DFID, 2007; Oketch, 2007). Public provision has worked well for targeted select groups, but is not cost-effective, supply driven, and in general, considered low quality.
There is much variation in the curricula of private and public TVET. Even though there is a practical component in some of the SHS curricula they tend to focus more on theoretical aspects whilst the other technical institutions are more practical oriented. The public institutions are run by various government ministries and private organizations, each with its own orientation. Some of the private technical institutes use curricula and certification that are sometimes different from the GES curricula or certification. There are multiplicity of certificates and standards because TVET for a long time has not been functioning under one umbrella. The informal apprentices however do not have any formal curricula. While the fundamental skills are essential to the public institutions especially because of the need for academic progression, this is not so for most of the private institutions. On the other hand, majority of the private institutions rely on the impartation of practical skills.

In Senegal, private schools represent an important part of the education sector. Most private schools are religious institutions. They are required to follow the government-approved curriculum, use government recommended textbooks, and employ licensed teaching staff. Some receive government subsidies to meet operating expenses. Students from private institutions are admitted to state examinations and may receive state diplomas. Of the 213 formal sector TVET providers in Senegal, 143 (representing 67%) are private as against 70 (33%) that are owned by the state. Total enrolments in both public and private institutions increased from 32,868 to 37,473 between 2007 and 2010, with an average annual enrolment growth rate of about 4.5%. Private providers consistently account for more than half of the total enrolments over the past four years (56% in 2007; 57% in 2008; 58.7% in 2009; and 56% in 2010). However, majority of the training institutions are located in urban centers with only 16% in rural areas (Ngome, 2009 in Afeti, 2011; Adobra, 2012: 27). Women constitute the majority of students in private institutions [76% in Ghana; 60% in Tanzania and Zimbabwe; 55% in Senegal] (AU, 2007: 25).

And in Benin, there are a total of seven courses of study for 29 trade associations. Training in the informal sector, which is primarily based on traditional apprenticeship, is more varied than in the formal sector. It covers 201 trades grouped into 42 trade associations. The provision of TVET in Burkina Faso is however poor. In 2006/07 there were 30 000 registered students in this stream, representing only 8 per cent of the total number of students. Private sector also dominates in the delivery of TVET with 78 per cent of institutions and 80 per cent of students; the private sector largely dominates technical and vocational education (AfDB/OECD, 2008).

### 3.7 Cost of Delivering TVET

One of the major problems facing TVET development is the cost of delivery. Technical and Vocational Education and Training is a very expensive undertaking in terms of equipment, physical facilities such as workshops, training materials and teachers’ salaries. The government funding of TVET has been erratic at times.

In Kenya the government upon the 1988 Report on the Presidential Working Party on Education and Manpower Training, adopted cost sharing, where the government contributes towards the payment of salaries and subsidize on the supply of materials and equipment. Parents on the other hand cater for tuition, operational costs and accommodation expenses through payment of
fees. The fees are however, considered to be high for the poor families. This has resulted in poor access and retention in TVET. Another source of funding is through levies. An example of such levy is the Industrial Training Levy which is levied to the employer through the Industrial Training Council or the Catering Training and Tourism Development Levy under the Ministry of Tourism and Information. Other cost effective approaches in training include integrating training with production where the institution is able to recover some of the training costs through sales of students' projects or contracts (Ngerechi, 2003: 6).

The government of Ghana, on the other hand, is the main financier of education in Ghana with support from donors, Internally Generated Funds, and Ghana Education Trust Fund (GETfund). TVET received only 1.5% of the total education budget in 2010, and in fact a decrease compared to that of 2009. The largest proportion of the Government of Ghana’s education budget is spent on primary education (43%). This is close to the suggested international norms. JHS receives the second highest share of 20%, followed by 18% at the tertiary level which is much higher than international norms. The remaining levels of education receive minimal proportions of the total expenditure, notably, TVET with less than 1% of the budget. This does not reflect Ghana's prioritization of TVET education. In 2010, education’s share of the total government spending and as a percentage of GDP was 23.2% and 9.8% respectively (BaffourAwuah, 2010: 16).

In Burkina Faso, TVET is financed by the state and other financiers. In 2006 the government allocated 1% (XOB 10 billion) of its budget to this sector. Apprenticeship tax paid by private employers in 2007 was expected to be about XOB 5.8 billion. Other donors such as French Development Agency, the EU, Chinese Taipei, the World Bank, the Islamic Development Bank (IDB) and the United Nations Development Program (UNDP) and other nations such as Switzerland and Austria, Germany all assist with the funding of this sector (AfDB, 2008). Burkina Faso also charges relatively high registration fees which make TVET inaccessible to the majority of the people.

The financing situation in Burkina Faso and Benin are quite similar. Benin's education system is funded primarily from the national budget. On average, the government spends XOF 378 000 per pupil during the year. Contributions from beneficiaries amount to around XOF 80 000 per pupil. External funding for TVET serves primarily to finance investment in infrastructure and provision of technical assistance (AfDB/OECD 2008). TVET in Benin is supported by the AfDB, the World Bank, the Islamic Development Bank, the Organization of Petroleum Exporting Countries and several bilateral partners (France, Germany, Switzerland, Belgium, Denmark, the Netherlands and Canada).
4.1 Skills in the current curricula

4.1.1 Ghana

Secondary education is structured to equip the youth with skills for further education and for employment through the application of knowledge, to think analytically and creatively, and solve problems. Fundamental and conceptual skills are especially highlighted in the curricula. Students are expected to be able to read, write and comprehend and be able to communicate well in a variety of situations and on employment. Besides, numeracy and technology are considered very important and hence every student is expected to acquire these skills in order to proceed further to employment or to post secondary schools. On the other hand, besides the acquisition of the skills above, students offering TVET are expected to be able to be employable. Consequently TVET is especially highlighted for employment.

Underlying Ghana’s employable skills concept has been the assumption that providing the youth with vocational skills will equip them with the requisite skills to make them employable or self employed. This assumption led to the vocationalisation of the previous Junior Secondary School (JSS) system in the 1986/87 educational reforms (Palmer 2005, 2006b). Vocational skills are stressed for employment rather than academic skills. The new curricula highlight the adoption of problem solving skills in technical and vocational education to develop the imagination, intellect and creativity of students (GES, 2002: 32). The emphasis on TVET is meant to give career focus, knowledge and skills to students in order to make them employable or self employed. It is also to update the knowledge and skills of the workforce to keep them abreast with new trends and developments (GES, 2002: 74).

4.1.2 Kenya

The Kenyan 8-4-4 policy education emanated from the assumption that it would equip pupils with employable skills thereby enabling school dropouts at all levels to be either self-employed or secure employment in the informal sector (King and McGrath, 2002). It has been observed that the new policy would orient youths towards self-employment. Haan (2001) also echoes such sentiments, when he says that the 8-4-4 (which replaced the 7-4-2-3 system) strongly emphasizes attitudinal and skills preparations for the world of work and especially self-employment (MOE, 1984: 4, cited in Eisemon, 1988: 29).

The curricula highlighted the development of technical and vocational skills for employment. Therefore the technical and vocational courses that were incorporated in the curricula were made practical in nature with the aim of facilitating transition to work after secondary education (Mwiria, 2002). The Kenyan education policy for the vocationalization of secondary schools had the following as the broad aims:
to prepare the youth for self reliance and self-employment through the promotion of practical skills and attitudes in specific sectors such as agriculture, industry and commerce;

- to promote vocational and entrepreneurial skills as the basis for further individual development;

- the production of skilled artisans, technicians and technologists for both the formal and informal sectors;

- exposure of students to scientific and technological trends, skills and ideas and promotion of lifelong skills that enable learners to better adjust to their work and domestic worlds through the inculcation of competencies that promote creativity, communication, cooperation, innovativeness and problem-solving abilities; and

- preparation of students for further training in post-secondary institutions (Mwiria, 2002:3).

4.2 Skills for employment

4.2.1 Specific employable skills highlighted in the TVET curricula

Current training programs in many countries are supply-driven. TVET programs are very often not designed to meet observed or projected labor market demands. The emphasis appears to be on helping the unemployed to find jobs. One of the most important features of TVET is its orientation towards the world of work and the emphasis of the curriculum on the acquisition of employable skills (Afeti, 2009). The main system of training for employment in the vocational and technical system outside the secondary school curricula are the apprenticeship system; the short term skills upgrading for self employment for unemployed youth such as Ghana's STEP and LESDEP programs and Jua Kali in Kenya (Maclean, Wilson and Chinien, 2009). TVET courses are highly rated for their vocational nature and the high level of employability skills and practice built into the curriculum. They produce employable graduates with valuable work experience.

4.2.2 Specific male/female employable skills highlighted in the curricula

The curricula have not highlighted any specific skills for males or for females. Every student has equal opportunity to pursue any skill or course that he/she deems fit. However, access and participation in TVET in Africa reflects the gender-bias division of labor (Afeti, 2009), where the so called academically demanding or difficult courses such as science, mathematics and technology are shunned by girls in favor of less difficult courses such as hospitality, catering, and fashion courses. The girls Science Clinics and the Miss Mathematics competitions in Ghana and Benin respectively, are responses to the low number of girls in sciences and mathematics.

4.2.3 Specific private/public employable skills highlighted in the curricula

The private sector plays a major role in equipping the youth with employable skills under the TVET scheme. Whereas the government of Ghana is highlighting vocational and technical
curricula for employment generation and functionality, the private sector leads in the number of TVET institutions established. The 2011 educational statistics (of Ghana) shows that there are 169 private TVET institutions as against the government’s 137 (MOE, 2012). At present, Kenya has more than 650 public and private TVET institutions which include 4 national polytechnics, 1 technical teacher training college, 35 technical training institutes and 600 Youth Polytechnics popularly known as village polytechnics (Ngome, 1998).

4.3 Skills emphasized/deemphasized in the secondary schools curricula

4.3.1 Key skills emphasized in the curricula

In the secondary school curricula literacy and numeracy skills are generally emphasized. These are designated as core skills in the schools and therefore a lot of emphasis has been placed on them. Even though these are very essential skills for employment, they are seen mainly as key skills for progression to the next educational level. In this regard, inability to score good grades hampers a student’s educational ambition.

An earlier experimental Junior Secondary Schools in Ghana which were later transformed into Secondary/Technical school curricula laid emphasis on vocational and technical skills, practical skills in Wood Work, Building and Concrete Works, Dress making, Catering, Visual Arts and Metal Works. The development of this curriculum is a pointer to the need to get solutions to the country's unemployment problems and middle level manpower requirements (Ninkarb, 2009: 4).

In the latest educational reforms in Ghana, the curriculum places a lot of emphasis on Information and Communication Technology (ICT). The government of Ghana recognizes ICT literacy as an engine for accelerated development outlined in the Ghana Information and Communication Technology for Accelerated Development policy document (Ghana ICT4AD Policy, 2003). Ghana introduced ICT into the school curriculum in September 2007 following the recommendations of the ICT4AD document and the National Education Review Committee Report (2002). Both documents highlight the importance of integrating ICT into the curriculum at all levels. As a result, the government and other institutions have invested huge sums of money in Education of Information Technology with the procurement of computers and the establishment of computer laboratories in most SHS's (Agyei and Voogt, 2010;MOE, 2007).

In the educational reform document, extra curricula activities are mentioned as being to equip the youth with team skills, leadership skills, personal skills, etc. Activities that are required for equipping the youth with these skills include participation in sports, clubs, associations, and organizations. These generic skills are seen as key to what employers require for employment. However, these are deemphasized in the schools in favor of the examinable curricula. In the policy document itself, these skills are poorly defined. Furthermore, there is no set criterion for participation or for assessment. For the few which are assessed internally, such as physical
education, the criteria for assessment are not well defined. Students’ participation in extra curricula activities, like clubs and associations, are voluntary and are not subject to assessment.

Besides the TVET program, the government of Kenya has over the last decade made attempts to enhance skills acquisition through the formal school system. The argument put forward to rationalize why the 1984 academic curriculum was diversified included the need to alter the negative attitude of young people towards manual work and rural livelihood; generate vocational interest; create a better match between the skills learned in school and those needed in the labor market; reduce rural-urban migration and help integrate schools with communities.

4.3.2 Key Skills for Employment Emphasized /Deemphasized

The necessary skills for employment emphasized in the curricula include general cognitive skills like literacy, numeracy or scientific literacy which are delivered through English, mathematics and science. More periods are allocated to these subjects as they are designated as core subjects that require special attention and pass to enable one to progress in academic carrier or in the job place. Non-cognitive ones like creativity, persistence, reliability or communication and/or more specific are however less emphasized for employment. Technology skills are vocation specific ones linked to the job, the work or the workplace and these are delivered through TVET. They form the core of employment skills and therefore are in terms of employment or self employment they become the fulcrum.

The case for TVET curricula cannot be overemphasized. In Kenya, for instance, according to an Economic Survey, the youth constitute 64% of the population which translates into 45% of the Kenyan labor force (Kenya, 2003). Currently, most economies in Africa are facing a decline in job opportunities in the formal sector while the informal sector is increasingly becoming the source of employment. In Kenya, for instance, in 1999, public sector employment declined from 36% to 21% and in the private sector, from 54% to 24% while in the informal sector employment increased from 65% in 1997 to 72% in 2001 (Kenya, 2005). In the year 2000, the informal sector contributed 18.5% of GDP. A study on growth and competitiveness in Kenya by the World Bank (2004), found out that out of a total of about 500,000 people employed in Kenya’s manufacturing sector, 56% were in the informal sector. The informal sector has a lot of potential to create jobs, develop future entrepreneurs and to produce quality and attractively priced products. TVET has the potential to curb high rates of unemployment especially among the youth and women. By offering hands-on skills, TVET has the potential to offer the much needed skills to develop the informal sector.

Technical/vocational education and training (TVET), is emphasized as an instrument for job creation, employment and development. However, in Africa, it has been left to the periphery and its significance has not really been manifested. It has been neglected in favor of institutions concentrating on purely academic education. People tend to view it negatively, as education and training meant for those who are not academically endowed in the society (Mureithi, 2011).

Nonetheless, TVET could be significant in contributing to knowledge and skill acquisition in Africa. It is important for sustainable industrialization and poverty reduction in terms of
creating a critical mass of technically and entrepreneurially qualified people, who are able to stimulate investment opportunities, create jobs and increase productivity (Rao, 1996). Considering the myriad problems facing Africa, TVET is not only important, it is a prerequisite.

In Benin, mathematics has been highlighted as an important skill that girls should acquire. To this end a mathematics competition is organized for girls. And in Ghana too science and mathematics clinics are organized for girls to boost their knowledge, interest and ability in mathematical skills, problem solving and computation without which certain occupations could not be pursued at the tertiary education levels.

4.3.3 Male-female differences

Traditionally TVET was regarded to be a provision reserved for the male gender. Kenyan enrolment data (2003) from TVET institutions indicate that women comprise of 30% of the total enrolment but only 5% of the 30% are in Vocational areas such as Engineering and Building Construction to name a few. The remaining 25% enroll in women traditional courses such as secretarial, nursing and hospitalities (Ngerechi, 2003: 6). Girl schools will rarely offer mechanics and engineering courses. And even where these subjects are offered, there is lack of equipment and little emphasis is placed on them. The education system favors general academics, with the curricula being biased towards the achievement of white collar jobs. For example, in Kenya, at the primary school level only about 45% or 225,000 pupils proceed to the secondary level and after secondary education, only about 20,000 of the nearly 200,000 candidates join the university (Kenya, 2003). Thus, quite a large number of young people do not complete the general education cycle.

Unlike the African countries being studied, in many OECD countries, there is much more emphasis on employable skills in the curricula, coupled with the appropriate relevant institutions and policy responses. In the United Kingdom, for example, the Qualifications and Curriculum Authority (QCA) provides guidance on the statutory requirement for work-related learning. Emphasis is placed on three main components of employability: enterprise capability; financial literacy; and economic and business understanding. This approach is derived from the findings of the Davies Review, which defines these components, and the knowledge, skills and attitudes which they require (OECD, 2009:16).

Industry in Japan demands employability skills such as communication, independence, cooperation and positiveness and a sense of responsibility in their employees. There are several programs, projects and competitions outside the school curricula meant to inculcate these essential skills in students to enable them function effectively on the job. Student Formula Competition of the Japan Society of Automotive Engineers (JSAE) is one of such competitions that are conducted for students outside the classroom to inculcate these basic and essential employable skills in them. The student formula JSAE was started in 2003 (Takeyuki Kamimoto Institute of Technology, 2011). This industry specific program is aimed at equipping the youth in the secondary schools with skills such as team building, practical and innovation that will make them more functional in the world of work.
The German system of vocational training (commonly referred to as directed and dual system) has frequently been referred to as an example of excellent practice of technical vocational education and training (Beardwell and Holden, 2001). Employers fund two-thirds of the training and together with trade unions and the local government; they have considerable influence on the control of the system. Laws and guidelines of vocational training and education regulate the system so that employers are duty bound to provide funding and resources for training. Employers’ unions and the state administer the institutions and procedures that operate the system jointly. Firms pay for on-the-job training, youths accept relatively low wages, and the vocational colleges are paid for by public funds (Beardwell and Holden, 2001).

Although it would be expensive to transfer Germany’s dual system as a whole or in part to Africa, it is important to note the influence exerted by organizations on funding for the on the job training and in regulation of skills being offered. In African countries, organizations’ influence in the running of TVET is almost zero. TVET is entirely a responsibility of the government and especially the trainees.

Again in Africa, the value of TVET is limited by negative attitude towards vocational training. Many people tend to relate TVET, especially the vocational part of it, to failure. A study by Mureithi (2008) on the challenges facing youth polytechnics in the Rift Valley province, Kenya found out that parents believe that only those who fail to make it to the secondary schools should be admitted to the Youth polytechnics. This notion may arise from the idea upon which TVET was established. The youth polytechnics for instance were established to complete the unfinished business of primary school (Tum, 1996).

4.4 Skills necessary to teach and Skills necessary for employment

Educators have various views on the kind of secondary education curricula that would elicit the desired outcomes; curricula that would lead to the requisite skills; that would promote employability and ultimately lead to the development that countries desire. Some educators believe that academic education, which is theoretical in nature, should be de-emphasized and rather technical/vocational skills should be more emphasized. Within the TVET curricula itself, certain course contents are emphasized in order to make the TVET more useful after the training. Consequently skills in management, entrepreneurial skills, as well as practical skills should be emphasized.

The emphasis on TVET, it is believed, is meant to create wealth and break the cycle of poverty. Characteristically the TVET can be delivered at different levels of sophistication. TVET institutions can therefore respond to the different training needs of learners from different socio-economic and academic backgrounds, and prepare them for gainful employment and sustainable livelihoods. The youth, the poor and the vulnerable of society can therefore benefit from TVET (AU, 2007: 5).
In Africa the youth lack technical skills, knowledge and entrepreneurial skills, while it abounds in natural resources which are unutilized, underutilized or even misused, whilst at the same time, its people wallop in unemployment and poverty. The utilization of these resources requires a highly trained workforce to design and operate the systems. Higher levels of skills are therefore core factors in enhancing and enabling the necessary response. Training should therefore equip people with skills and competences they require to be employable or to create their own jobs. TVET has the capacity to offer this much needed practical training to meet the challenges (Mureithi, 2010). An emphasis on TVET, in which trainees are offered skills aimed at rural development like farm related skills and knowledge, establishment and sustenance of small and medium enterprises directly related to rural needs and demands, can go a long way in curbing rural-urban migration (Mureithi, 2010).

An evaluation of the secondary school curricula also reveals that they do not equip the youth with the skills that can help them to become self employable, in the event that they do not get employed. These gaps, some educators believe, could be filled with an expanded program in managerial and self employable skills. Thus Nelson (1993) observes that if training for self-employment is to become an important objective for vocational programs in schools, it must begin to provide additional training in management and entrepreneurial skills, as well as provide business experiences for those persons contemplating self-employment as a potential career. He contends that technical, managerial and enterprise abilities are three components essential for the successful operation of an enterprise and should therefore be integrated into the school curriculum. Enterprise abilities can be developed in persons who want to set up ventures for themselves (Ninkar, 2009:27). Towards this end, the curriculum for Secondary Schools and VOTEC institutions should incorporate management training needed to equip its graduates with skills to manage their own business enterprises effectively. It is believed that this is the only way for raising an effective middle level manpower for industry. Greisens (1993) also argue that training in technical and managerial skills is the key to successful preparation of a middle level manpower for self-employment in the informal sector.

Entrepreneurship programs can be delivered at different levels of the education system, as well as by private and voluntary organizations. Also, it is important to recognize that entrepreneurial skills and attitudes can be applied in work and non-work settings, through voluntary work or organizing clubs and societies as well as in domestic or social activities (OECD, 2009:5). The aim of entrepreneur education is for the acquisition of key (or core) skills: personal and social skills; and skills relating to business or financial literacy. Education-based programs could be targeted at young people at both levels of secondary school and university.

The entrepreneurship being embedded within the broader school curriculum has been recognized and adopted widely. For example, programs which have entrepreneurship as a curriculum goal have been launched in New Zealand. This approach is often predicated on the need for a whole school’s design to be adopted. In this case, education for entrepreneurship provides “an underlying basis for delivering education across all areas of the curriculum” (OECD, 2009: 6). Junior Achievement program in the United States and the New Zealand Primary Enterprise Program (PrEP) are some of the examples of early skills enhancement in
entrepreneurship (OECD, 2009: 5). A report on the use of mini-companies in secondary education (European Commission, 2005) stated that the objective of a student company is to develop either a real economic activity on a small scale or a realistic simulation of an economic activity.

There are several activities aimed at inculcating this all-important skill in the youth in the OECD countries. For instance with the ASDAN awards scheme in the UK, students receive credits for completing challenges in a number of areas, including Science and Technology, Work Related Activities, and Information Transmission. In Australia, the Plan Your Own Enterprise Competition is designed to raise students’ awareness of small business management and planning principles and practices. An example of a partnership scheme is Young Achievement Australia, which offers programs that link education and industry. A Business Skills Program, which is facilitated by mentors from the business world, is delivered outside school to groups of 15 to 25 young people for two hours a week over 16 to 24 weeks. With this program students are required to “create, manufacture and market a product or service in a competitive environment”, thereby going through the stages of a business cycle “and take responsibility for all essential business processes, from selling shares and raising capital to liquidating the company” (OECD, 2009: 6).

Hoppers (1993), looking at the problem of providing skills needed for self-employment, suggested that education, training and production in African vocational and technical institutions should take the form of workshop practice, field work and production units. He emphasized that if the major focus of the vocational and technical curriculum is to facilitate orientation towards middle level manpower development, then the arrangement would need to reflect the goals and objectives. He further suggested that the curriculum should be supported with the necessary inputs such as the right personnel to carry out the vision and up to date workshop equipment. Modern facilities and equipment for training in skills are inevitable and should form an integral part of the scheme for vocational and technical training institutions for developing countries (Ninkarb, 2009: 28). Officials at the curriculum division of the Ministry of Education in Ghana stressed that to equip the youth very well for the workplace requires emphasis on practical skills training and less reliance on examinations as basis for assessment. They, however, pointed out that to assess practical skills is expensive and beyond the budget of the ministry.

A recent ADEA triennial working paper on education (in Ouagadougou) set three parameters for the educational curricula. The first is the promotion of the common skills; second, lifelong learning; and third, sustainable development. It advocated for comprehensive reform in the delivery of these common skills which it enumerated as language and literacy skills, cognitive and scientific skills, personal development and life skills, social and citizenship skills and work-related skills (ADEA, 2012). Another study in Ghana and Senegal on employability skills recommended improving the training capacity to offer curricula that meet the needs of the job.

---

4 Interview with official of the Curriculum division of the Ministry of education in Accra headed by Mr Aning as part of this study
market. It further recommended giving the youth basic statistics software and analytical techniques, ethics and personal skills, marketing and sales techniques, language and general writing skills, as well as life and literacy skills for the various employment sectors in Ghana and Senegal (YEN, 2009).

Writing on Kenya, Ngome (1998) says that “it is imperative to stress that the objective of practical studies in school should not be vocational training as articulated earlier but rather the acquisition of manual dexterity and practical skills as an integral part of general education”. This, according to him, would endow the students with skills in future occupations. Some of the skills that should be particularly stressed and developed through practical studies ought to be problem solving; independent thinking; practical resourcefulness and activity; cooperative teamwork and good work habits. He wrote, “we as educationists, would greatly appreciate practical orientation in the teaching of all subjects through project work and an experimental or applied approach”. Kenya National Examinations Council report indicates that students perform poorly in vocational or Technical subjects because of lack of exposure to practical work, a direct consequence of inadequate practical skills impartation to students (Ngome, 1998).

4.5 Skills secondary age youth have including skills acquired from outside the curricula

Secondary age youth in Africa are generally equipped with some basic skills that help them to function in various employment sectors or in other spheres of life. With some slight variation the skills for the East and West African youth appear to be the same.

In school, youth from the secondary schools and the technical and vocational schools are given generic skills such as conceptual and analytical skills, problem solving skills, numeracy and technical skills to function in a variety of situations. However, in Ghana, the youth in the technical schools are taken through a competency based training approach that relies mainly on practical work and seems to take care of gaps in the old system.

Males in African secondary schools are inclined towards more mathematical and science based skills, while the females have acquired in addition to the basic fundamental skills, conceptual skills and personal skills. Test scores (see Chief examiner’s report 2006 for Ghana and Nigeria) in the secondary schools reveal that even in the core skill areas, males perform better than the females. This situation has led to certain interventions in some countries such as Ghana and Benin where Science clinics have been established outside the curricula to give girls more tutorials and to motivate them and get them interested in mathematics and science. In Benin too, there is a Miss Mathematics competition to motivate the girls in secondary schools to offer mathematics.

Technical and vocational skills are acquired by both males and females. In Ghana the enrollment in technical and vocational courses for males and females are almost at par however the skills acquired are not the same. The growing tourism industries in countries such as Ghana, Benin, Kenya and Senegal have opened more opportunities in the hospitality sectors of the
economy with job openings such as tour operation, hotel management, catering and related services. Females in vocational and technical schools are gravitating towards those areas while males are taking advantage of the construction industry and its related services and are acquiring problem solving skills, scientific and practical skills for these industries. Youth who are outside the school curricula, do not have the fundamental skills that will enable them to read, write and communicate well in the world of work. These youth from apprenticeships, have acquired a couple of practical skills in specific trades and occupations that make them employable. They may be creative but not well organized and may lack some personal and business related skills. They may nevertheless possess some other skills that have been acquired from home, society and in apprenticeship.

4.5.1 Private versus public

From the curricula taught, youth in the public sector have acquired the basic core skills for employability. In the private sector however, the emphasis is not so much on the acquisition of core skills as it is on the practical aspect of the vocations. Moreover, not all private TVET institutions use GES curricula in the case of Ghana. The case in Senegal is slightly different where all private institutions use government approved curricula.

4.5.2 Skills Acquired From Outside the Curricula

Generally a secondary education curriculum equips the youth with valued skills for the workplace. In addition to the skills that are obviously taught through the educational system, there are other skills that are required for employability that are not taught in the curricula and for which there is no assessment or examination.

Thus, outside the secondary school curricula, the youth also acquire some skills which are both generic and specific through formal or informal associations and organizations and also from apprenticeships and short term training programs. Basic literacy and numeracy skills could in some cases be acquired from informal schooling. Some personal skills and community related skills could also be acquired through these sources. Business skills as well as citizenship skills are all acquired from here.

These skills could also be acquired from extra curricula activities in the school or from outside the school. Students develop some job-specific knowledge through internship, summer job or class work or project. For instance, how to run a campus club, participate in sports or tackle other school challenges could endow the student with team spirit. Negotiation and money management skills could be acquired as a treasurer of a club. Critical thinking and writing skills developed in these extra curricula activities make a great impact on subsequent jobs one undertakes.
The non-emphasis on extra curricula activities in most of the African countries even though they are included in the curricula framework denies the youth valuable employable skills while they are in school. The policy document on education in Ghana mentioned co-curricular activities as important for acquisition of certain skills. While in school, students are expected to participate in clubs and societies as well as community service. These co-curricular activities are intended to equip students with such personal, social and oral skills as public speaking manners, confidence, leadership qualities, team spirit, community spirit and data collection (GES, 2002: 70). In spite of this, participation in these extra curricula activities is voluntary because they are not examinable.

The social expectations outside the school puts an obligation on a person to be honest, disciplined, committed, self reliant, reliable and hardworking. These valuable employable skills are acquired from the home and society as well as from the religious institutions and organizations one belongs to.

In West Africa in particular, traditional apprenticeship offers the largest opportunity for the acquisition of employable skills in the informal sector. In Ghana, the informal sector accounts for more than 90 percent of all skills training in the country (AU, 2007: 6). TVET systems in Africa differ from country to country and are delivered at different levels in different types of institutions, including technical and vocational schools (both public and private), polytechnics, enterprises, and apprenticeship training centers. In all of sub-Saharan Africa, formal TVET programs are school-based (AU, 2007: 6).

In almost all African countries these means of skills acquisition through informal systems outside the school curricula exist and the traditional apprenticeships system are a major source of skills acquisition for the youth that prepare them into certain occupations and work. There are also both local and international groups that through their activities equip the youth with valuable employable skills. For instance, the international aid agency ‘Right to Play’ UK, is an athlete-driven, humanitarian organization, which uses sport and play as tools for the development of children and youth to teach important skills including leadership, teamwork, conflict resolution, self-esteem, communication, commitment, respect and fair-play.

**4.5.2 African Youth Skills Compared to South Eastern Asian and OECD Countries**

The African youth like the youth in other regions possess some skills that make them employable. These skills are acquired through both formal and informal school. Youths have passed through the educational system that secondary education, either academic or technical vocational are endowed first of all with basic literacy skills such as reading, writing and technology skills. They are also given generic skills that are transferable across a wide spectrum of occupational situations as well as employable skills through the technical and vocational skills. Both within the curricula and outside the curricula, several skills are also acquired. The acquisition of cognitive and non cognitive skill is important for the world of work and functionality in the world. These skills are measured in examinations or through international assessment test scores for comparability.
Curricula in West and East Africa place premium on language and comprehension skills for effective communication, where French, English and mother tongue is given prominence. Language is expected to promote listening and reading comprehension, as well as speaking and writing skills that are essential in the workplace. Similarly almost all the countries stress the importance of scientific skills considered important for the world of work. Mathematics curricula stress skills in numeracy and problem solving. In Ghana the curricula stresses the acquisition of knowledge, thinking skills, problem solving skills, innovations and creativity. Specific occupational skills are however given prominence in the TVET curricula.

Few African countries participate in international tests. For the countries in this study, only Ghana has participated in the trends in International Mathematics and Science Study (TIMSS). Ghana’s scores for 2003-2007 have largely been below average even though there is an increase in performance. The report indicates that basic school students are weak in mathematics and science. It placed 45th in position- the overall score of 276 was far below the international mean of 467. The mean percentage correct on all mathematics test items for each participating Ghanaian student was 15. There was a large variation in mathematical abilities among the students with some scoring as low as 130 and others scoring as high as 430. Performance was more at “facts and procedures” level instead of “using concepts”, “solving routine problems” and “reasoning” levels. In the science the overall mean score of 255 placed the nation at 45th position (International average: 474). The mean percentage correct on all test science test items for each participating Ghanaian student was 19%. There was a very large variation in science abilities among the students with some scoring as low as 52 and others scoring as high as 450. Pupils’ weakest content area was in physics. For both the science and the mathematics Students performed well at the “factual knowledge” level instead of the “conceptual understanding” and “reasoning and analysis” levels. This report thus unearths the weakness in the educational system where passing examination is over emphasis to the detriment of conceptual knowledge or application, reasoning, problem solving. There is a general low pass rate of science Mathematics and English at BECE and SSCE/WASCE. The weak scores indicate inherent gaps in the intended curricula, the implemented curricula and the outcome - a problem that is blamed on the capacity of teacher and delivery of skills. (Anamuah Mensa and Asabere-Ameyaw, ----)

The Southern and Eastern Africa Consortium for Monitoring Education Quality results of the (SCAMEQ) at the basic level also reveal above average scores for Kenya Uganda and Tanzania. Though there is a steady increase in the performance of Kenya (reading 543.3, mathematics 563.3. Kenya. Since mathematics is used to determine whether a student has developed cognitive skills, it is assumed that majority of secondary school students in Kenya have well developed cognitive skills as they do well in mathematics at secondary school level (Kandiri, -----). The submission of countries in east Africa to the assessment is an indication of the efforts and the premium placed on the acquisition of basic cognitive skills. The results however indicate that in the East Africa there is a correlation between living standard and geographic location and performance, where pupils from urban areas and high socio economic groups do better than their counterparts in rural areas and socio economic groups (SCAMEQ, 2005.)
In South East Asia International test score indicate that there is a dearth skill in mathematical and science. In Thailand, the 1999 Trends in International Mathematics and Science Study (TIMSS), revealed poor scores in Math and Science. This was attributed to the poor quality of teachers in these subjects The OECD Program for International Student Assessment (PISA 2009), also indicate a low performance in reading and mathematics. Out of 65 participating countries on this assessment on the performance of 15 year old students, Thailand ranked at 47th place in reading and science and 48th place in mathematics (NUEPA Draft report, 2012).

South East Asia stress the importance of science process skills in secondary school science curricula. These are expected to lead to skills considered vital for employability. Curricula in South East Asian countries also stress English communication. Mathematics curricula stress skills in numeracy and problem solving. However, junior secondary school curricula are expected to lead to personal skills and attributes and skills related to the community. Job-related skills and entrepreneurship are however not explicit mention in secondary school academic curricula in South-East Asia. They are however embedded in vocational secondary curricula. In South East Asia, an analysis of both academic and vocational curricula reveals the predominance assigned by policy to the development of Thinking Skills, Communication and work related skills. The draft NUEPA (2012) report indicate that in Sri-Lanka, where 80 percent of all unemployed in 2006 were youth. About a third had at least 10 years of schooling. One obstacle preventing employment among educated youth was perceived as poor English language skills. Furthermore vocational training and formal schooling had still left them unprepared in important ways for the labor market. Most countries in South East Asia, like India, do not participate in large scale international assessments. While views on communication skills in English are diverse, it is said that most school graduates can’t communicate effectively in English. However, analysis of Indians GMAT scores in 2010 reveals that Indians are above average in the international score in the test.

Even though it is held that at the basic and the secondary level, the basic knowledge that delivers cognitive abilities and skills indicate that African students are under performing as compared to their counterparts in OECD countries it cannot be upheld. There is little room for comparability since there are no uniform criteria for assessment. The same situation applies to the South East Asian countries.


African Union 2007 Strategy to Revitalize Technical and Vocational Education and Training (TVET) in Africa Final Draft


Afeti, G and Adubra A L 2012, Promoting critical knowledge skills and qualification for sustainable development in Africa: how to design and implement an effective response by education and training for Africa lifelong technical and vocational skills development for sustainable socio economic development in Africa - Sub theme 2 - Triennale on Education and Training in Africa (Ouagadougou, Burkina Faso, February 12-17, 2012)

Anamuah-Mensah and Asabree-Ameyaw (undated) Science and mathematics in basic school in Ghana – a power point presentation


Caoa, Y., 2010: Skill Development and Policy Implications in East Asia and Australia in Comparative & International Higher Education 2.


Glennerster, R, M Kremer, I. Mbiti and K. Takavarasha (undated), Access and Quality in the Kenyan Education System: A Review of the Progress, Challenges and Potential Solutions, In Collaboration with The Abdul Latif Poverty Action Lab at MIT (J-PAL) and Innovations for Poverty Action (IPA)


KANDIRI, J. M. (undated) Pedagogies to Foster Interest in Computer Programming in Secondary Schools- International Computer Science and ICT Conference; Topic of interest ICT in Education. STRATHMORE UNIVERSITY FACULTY OF INFORMATION TECHNOLOGY


Maclean, R; Wilson, D; Chinien, C; 2009 International hand book of education for the changing world of work volume 1

Makori, A 2005 The Kenya's educational policy: Exploring some of the major impediments to redesigning pedagogy. University of Reading A paper presented at the International conference (30th May to 1 June 2005: Nanyang Technological University, Singapore)


Ministry of Education 2011: Ghana Basic Education Statistic 2008-2011


Mureithi, Grace W, 2008 Technical, Vocational Education and training in Africa: has it lost its significance. Moi University Kenya


Ninkarb, Cheatle Jacob 2009 The Vocational and Technical Curriculum For Senior Secondary Schools and its Relevance to Middle Level Manpower Development for Industry in Brong Ahafo Region of Ghana. University of Cape Coast http://ir.ucc.edu.gh/dspace/bitstream/123456789/785/1/NINKARB%202009.pdf (date assessed 13/04/2012)

Oduro, A D. 2000 Basic Education in the Post-Reform Period SELECTED ECONOMIC ISSUES No. 2 2000 Centre for Policy Analysis (CEPA) Ghana

OECD 2009 PRO-POOR GROWTH: EMPLOYMENT - © Vocational Training and the Informal Economy*Armand Rioust de Largentaye, AFD


Republic of Ghana, National science and technology education policy November 2004
Office of the Prime Minister of Kenya 2011: Access and Quality in the Kenyan Education System: A Review of the Progress, Challenges and Potential Solutions

Reis, A. B; M. do Carmo Seabra and Silva, J. M. 2010: Measures of School Quality

Republic of Kenya 1999 totally integrated Quality Education in Kenya (Koech report) Nairobi Government printer


Sumra, S & Rakes, R (undated) Secondary Education in Tanzania: Key Policy Challenges working paper no. 06.4


35

Wosyanju, C. (Undated): The System of Education in Kenya

------------------------The Youth Employment Network and the International Youth Foundation Private Sector Demand for Youth Labour in Ghana and Senegal GHANA AND SENEGAL STUDY FINDINGS July 2009
------------------------ 2007: The Role of Youth Skills Development in the Transition to Work: A Global Revie
------------------------Asian Development Bank 2008: Education and Skills Strategies for Accelerated Development in Asia and the Pacific,
SD Publication Series Office of Sustainable Development Bureau for Africa
------------------------Association for the Development of Education in Africa (ADEA) – 2012 Common core skills for development in Africa. Synthesis paper sub theme 1

Other Web Sources

http://www.stat.auckland.ac.nz/~iase/publications/17/2F3_ACCR.pdf
http://cotonou.usembassy.gov/facts_about_benin.html
http://siteresources.worldbank.org/INTAFRREGTOPSEIA/Resources/No.5Curricula.pdf
### Appendix 1: Matrix for data Collection

<table>
<thead>
<tr>
<th>No</th>
<th>Objective</th>
<th>Generic employable skills</th>
<th>Methods/source of Information</th>
<th>Structure of Data</th>
<th>Contact Institutions</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>The skills currently taught in curricula</td>
<td><strong>Fundamental skills</strong> literacy numeracy technology <strong>People related skills</strong> communication interpersonal influencing <strong>Conceptual skills</strong> problem solving planning/organization creative/innovation <strong>Personal skills</strong> adaptability motivational presentation commitment reliability honesty resourcefulness flexible assertiveness <strong>Business skills</strong> innovative enterprise commercial <strong>Community related citizenship accountability Others</strong></td>
<td>Review of existing Research Review of documents from  - World Bank  - UNESCO  - specific country education ministry  - specific country Secondary school curricula  - international and country test score  - trade associations  - association of private schools  - employers’ associations  - ECOWAS  - COMMESA  - East African Community Probable interview with  - educators  - employers’ associations</td>
<td>West/East Africa  - Ghana/Benin/Kenya  - secondary/vocational  - public/private  - male/female</td>
<td>General  - UNESCO  - World Bank  - EU Delegation  - Specific country embassy  - ECOWAS  - COMMESA  - East African Community</td>
</tr>
<tr>
<td>4</td>
<td>Skills necessary to teach</td>
<td><strong>Skills necessary to teach</strong></td>
<td></td>
<td></td>
<td>West/East Africa  - Ghana/Benin/Kenya  - public/private educators  - secondary/vocational educators  - male/female</td>
</tr>
<tr>
<td>5</td>
<td>Skills necessary for employment</td>
<td><strong>Skills secondary age youth have</strong></td>
<td></td>
<td></td>
<td>Africa/OECD/East Asia  - public/private youth  - male/females</td>
</tr>
</tbody>
</table>
SECONDARY EDUCATION IN AFRICA

Steps to be followed for write-up on each Innovative model

- Describe innovative model identified to show how it works
- What is the rationale for the model?
- Who organised that model?
- Where is it organised (rural or urban, regions, nationwide, etc)?
- Who constitutes the target group/beneficiaries i.e. boys or girls?
- What is the cost of delivering this model?
- Who pays for the programme (fee paying or absorbed by government)?
- Level of participation/coverage
- To what extent is this model effective in ensuring high quality education and relevant skills?
- How suitable is this to the target population (rural/urban)?

Skills

1. Current curricula taught in secondary schools
   I) What skills are included in the current secondary school curricula?
   ii) What skills in the current secondary curricula are taught?

   iii) What skills are needed in the secondary school curricula that are not there?

2. What specific skills highlighted in the current curricula may be particularly helpful in preparing students for employment?
3. I) What key skills are emphasized in the curricula?
   ii) What key skills are deemphasized in the curricula?
4. i) What do educators believe are necessary to teach students?

   ii) What do educators believe are most necessary for employability?

   iii) Which of these are included in the current curricula and which are not?

5. i) What skills do the secondary school-age youth (15-18) currently have?

   ii) What skills do students have that may have been gained from outside the formal educational system?