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**Promoting critical knowledge, skills and qualifications for
sustainable development in Africa: How to design and
implement an effective response by education and
training systems**

Sub-theme 1

**Common core skills for lifelong
learning and sustainable
development in Africa**

**Application of ICT by Basic level Teachers and Learners to the
Development of Core Skills for Lifelong Learning: A Transnational
Study in Ghana and Mali**

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Working Document

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List of Acronyms and Abbreviations

ADEA:	Association for the Development of Education in Africa
BECE:	Basic education certificate examination
CRDD:	Curriculum Research and Development Division
DFID:	Department for International Development
FGD:	Focus Group Discussion
GES:	Ghana Education Service
GMOE:	Ghana Ministry of Education
ICT:	Information Communication and Technology
JHS:	Junior High School
L.L.L.:	Lifelong Learning
MDG:	Millennium Development Goals
NGO:	Non-Governmental Organisation
OECD:	Organization for Economic co-operation and Development
UNESCO:	United Nations Educational Scientific and Cultural Organisation
T.V:	Television

1. Abstract

It has been generally suggested that ‘conventional education and training provision is not sufficiently promoting development of the skills necessary for economic and social success’ (McGrath, 2003). A call has therefore been made for a new focus on Lifelong Learning skills in the light of major challenges such as poverty, inequality and mass unemployment. With this in mind, this study sought to unearth the basic lifelong learning skills associated with sustainable development at basic education. It also picked on one of the vital cross cutting issues of ‘the roles of ICTs in improving access to quality and relevant education. Three schools (two in Ghana and one in Mali) were used as cases for study on the topic and in-depth data generated using triangulation approach. The analysis have shown that curriculum developers were conscious of the need for lifelong learning skills development when designing the national curricula and that provisions had been made in the curricula for their development. However, the level of effectiveness in the development of these lifelong learning skills has not been very commendable because of the relatively narrow scope in which the skills are perceived by the curriculum implementers. On the other hand while ICT integration into the school curricula is a desired option for all stakeholders involved in the study, the school environment did very little to promote it. Though Ghana has an ICT policy for the education sector, the curriculum design does not strongly recommend the application of ICT as a teaching tool and the schools ill-equipped for this desired option. In Mali, there is yet to be an ICT policy for the education sector. Recommendations have been made to serve as a basis for a paradigm shift in the nature and construction of Lifelong Learning pathways for the youth.

2. Executive Summary

This is case study of three basic schools in Ghana and Mali - two different linguistic countries with different educational systems in West Africa. Schooling must equip pupils and students to grow through life and not simply go through life. This concern, coupled with the need for putting ICT integration to advantage in educational provision, provide the basis for the study. The study sought to unearth the basic lifelong learning skills associated with the development of cognitive skills at the basic education level in Ghana and Mali. Lifelong learning may be defined as the "lifelong, voluntary, and self-motivated pursuit of knowledge for either personal or professional reasons.

Specifically, the study sought to achieve the following objectives:

1. To identify lifelong learning skills contained in the basic school curriculum and the degree of success in developing them during the curriculum implementation.
2. To identify policies and experiences in Ghanaian and Malian education curricula that have the potential to promote the development of lifelong learning skills in the school system, with particular focus on the systematic application of ICT for enhanced and sustained lifelong learning skills development
3. To propose and share best practices (transnational experiences) in the use of ICT in pedagogy for enhanced and sustained development of core skills for lifelong learning.
4. To compare the application of ICT for lifelong learning skills development among institutions and between Anglophone and Francophone systems of basic education (if possible).
5. To document relevant literature on the application of ICT for the development of core skills for lifelong learning from the African perspective

Three basic schools as cases were selected purposively. Their selection, in consultation with the appropriate education authorities, was based on the belief or assumption that ICT integration takes place in the schools. School 5 of the Kanda Estate Cluster of schools (public) and the Jack and Jill Preparatory School (private) were selected in Ghana while the Kalabancoura school (public) located in the Bamako District was selected from Mali.

Through stratified-random sampling, six teachers in addition to the head-teacher (and the circuit supervisor in one instance) were selected in each school for the study in Ghana. In the Malian case, four teachers of the first cycle school, and six from the grades 7 – 9 level were selected for study. Five survey data capturing instruments were developed, validated through peer review and used for data collection. Analyses of the school syllabuses of the selected subjects were undertaken with the view to identifying or ascertaining elements of and provisions for the development of core skills for lifelong learning and how ICT is recommended to be applied to enhance the acquisition of the targeted skill. Comparative data analysis (among schools, levels and among countries) was done.

The findings were as follows: The national curriculum in Ghana is designed by the Curriculum Research and Development Division (CRDD) while that of Mali is designed by the National Direction of Pedagogy (formerly National Pedagogical Institute)

- The analyses have shown that the curriculum developers were particularly

aware of and planned for the development of lifelong learning skills, though emphasis on the skills differ from country to country and from subject area to subject area. .

- A great majority of all categories of respondents in all studied schools – school heads, teachers and pupils- were aware that schooling is meant to endow on pupils a lot more than knowledge to pass school examinations. Schooling creates grounds for acquiring skills that make it possible to continue learning and adjusting to new situations in future.
- Some lifelong learning skills were identified by teachers and their heads but these were generally narrow in scope. They include careful observation, enquiry, careful and critical assessment of information, visualizing, classifying, categorizing, scrutinizing, estimating and the use of internet to search for information.
- In all three cases, teachers had indicated that it is easier to facilitate pupil's acquisition of lifelong learning skill through regular assignments of different kinds and tasks that teaching directly for the development of the skills.
- The Ghana Education System has an ICT policy which makes provision for even the basic education level whereas the Malian education system is yet to have one for basic education. An ICT policy was recently (May 2011) introduced for 2nd cycle schools
- Except for two teachers in one case, all other teachers have had no training on ICT literacy and usage for teaching. Though ICT is expected to be integrated into the Ghanaian education system, teachers hardly apply it mainly as a result of their own lack of skill and expertise.
- Some pupils in all three cases were found to be computer literate and had acquired skills to browse the internet. Most of the time spent on the net however was used to watch movies, listen to music or participate in social networking.
- The challenge of preparing pupils for external examinations, lack of ICT equipment and lack of ICT skills by teachers were identified in all cases as the greatest challenges to ICT integration in the school system. Added to this in the Malian case is the absence of an ICT policy for the basic level of education.
- Large class sizes, overloaded syllabuses and inadequate know-how of teachers were identified as the greatest challenges to helping pupils in school to acquire lifelong learning skills.

3. Chapter One

1.0 Introduction

It is often argued that the ‘conventional education and training’ provision is not sufficiently promoting the development of skills necessary for economic and social success’ (McGrath, 2003). McGrath consequently advocates for a new focus on Lifelong Learning skills in the light of major challenges such as poverty, inequality and mass unemployment. Indeed, most governmental attempts at “improving the quality of education and training” have made issues of competency development and Lifelong Learning strategies important aspects of such attempts and critical items on the political agenda in the light of globalization (Rychen 2003). This concern is found to be in tune with the Association for the Development of Education in Africa’s (ADEA’s) 2011 Triennale sub-theme which focuses on the development of ‘basic cognitive skills’. The importance of this sub-theme is generally derived from the argument that, in Africa, formal schooling ‘does not provide enough room for teaching critical thinking skills’ (Triennale Concept note).

This study sought to unearth the basic lifelong learning skills associated with the development of cognitive skills at the basic education level in Ghana and Mali. Basic Education in Ghana is defined as “the first nine years of formal education to which every child in Ghana is entitled as of right to equip him/her to function effectively in society” (GMOE, 1986). It is composed of two years of kindergarten, six years of primary education and three years of junior high school education. Basic education in Ghana is not only a right but also compulsory for all school age children. The rationale for introducing some elements of high school content into basic education is to offer opportunity to pupils who exit formal schooling after the basic level the benefits of some high school exposure.

Similarly in Mali, Basic Education or what Elementary Education refers to the first nine years of formal education, leading to the ninth grade. As it is in Ghana, this stage of education is preceded by kindergarten (education prescolaire). In the Malian context, basic education includes non-formal education (centre d’alphabétisation des adultes and centre d’apprentissage féminine) but this type is excluded from this study. The essential difference in meaning of the term ‘basic education’ between the two systems (the Ghanaian and Malian systems) is the exclusion of non-formal and informal education in the Ghanaian system while these are essential components of the Malian educational system.

This study, a contribution to the preparations for the 2011 ADEA Triennale, tried to explore an aspect of one of the vital cross cutting issues – i.e. “the roles of ICTs in improving access to the common core skills, especially skills for lifelong learning, across different age groups and in enhancing the quality and relevance of learning processes to the eventual benefit of learners and teachers”. It is our belief that a transnational study of this nature, even if on a small scale, will not only give opportunity to share experiences across countries, but will also serve as a basis for a paradigm shift in ‘the nature and construction of Lifelong Learning pathways for both the youth and adults.

1.1 Background to the study

Two main international agendas underpin and informed this study: The Millennium Development Goals and the wind of reform blowing in education which allowed for the restructuring and redefining of the curricula in a number of African countries. In spite of the reforms, however, the school systems in most developing countries were and perhaps are still highly driven by external examinations. This trend seemed to have stemmed from the pressure from the excessive desire to get pupils/students to pass examinations and be awarded certificates. This results in the narrowing down, with impunity, of the real scope and for that matter meaning of education, especially at the implementation stage.

Indeed, the desire for certificates and the extents to which both teachers and students are ready to go to achieve this desire has left very little room for the school system to pursue the totality of the national goals and objectives of education, especially the non-examinable ones. This tends to limit education to the narrow scope of learning to pass examinations and be awarded certificates and not learning as a basis for acquiring skills to continue the learning process after school. Schooling must equip pupils and students to grow through life and not simply go through life. This concern, coupled with the need for putting ICT integration to advantage in educational provision provide the basis for a study into the extent to which the education system is catering for lifelong learning skills and also tilting it (the study) to appraise the relevance and use of ICT in the development of these skills to meet the continuing developmental needs and challenges facing society. It is undisputed that “the technology revolution has propelled an unprecedented level of speed of change on the economy.. and...in this revolution, the difference is not access to infrastructure alone, it is more than ever the human element” [Issue Paper: Recognizing Value Credentials: Skills and Lifelong Learning (2009)] This primary identification of the importance of the human element and the need to create lifelong learning structures that cognitively develop the individual to face the challenges that the ICT revolution brings, gives to this study a socioeconomic and cultural perspective.

There is yet another perspective this study: Owing to globalization, there is the need to harmonize the development of lifelong skills across Africa and this comparative study (though very limited in scope) will enable countries to share experiences and methodologies in the development of lifelong skills in general and the application of ICT to develop same in particular.

1.2 The Basic Education Curriculum in Ghana and in Mali

The basic school curriculum in Ghana is officially defined by the syllabuses developed on behalf of the Ghana Ministry of Education (GMOE) by the Curriculum research and development division (CRDD) of the Ghana Education Service (GES). The curriculum is based mostly on the objective model of curriculum development. A major characteristic of the model is its emphasis on the statement of instructional objectives which should describe desired learning outcomes in terms of specific learner activities. (Tyler,1991).

According to Mereku (2011), however, “the sole use of the objective model of curriculum development had led to over-emphasis on the products of learning (i.e. knowing basic facts, principles, skills and procedures) at the expense of the process of learning which involves higher cognitive competencies (such as applying, thinking – critically, creatively & practically, connecting ideas, people and realms of life and above all, learning how to learn” he explained that some of the higher cognitive competences which naturally enhances the development of lifelong learning skills cannot be easily stated in terms of specific learner activities. He contends that the tendency for teachers and sometimes even curriculum developers is to neglect the development of the higher cognitive competencies and concentrate on the specific learner activities that can be objectively assessed in time limited paper- and -pencil tests.

In Mali as in Ghana, the basic education curriculum is made up of two components – the primary curriculum and the grades 7 to 9 curriculum. The primaries school curriculum (first cycle = “1er cycle fondamental”) is officially called “Programmes Officiels du 1er cycle de l’Enseignement Fondamental” and was revised in 1994 by the National Pedagogical Institute (now known as National Direction of Pedagogy) on behalf of the Ministry of Education. It was originally developed in 1962. The second component – i.e. the grade 7 – 9 curriculum called “Progression des Programmes du Second Cycle” was originally developed in 1962 and went through series of reforms in national education policy until the final version was arrived at in 1992.

1.3 Lifelong Learning and Skills

It may be useful at this stage to do a brief exploration of the concept of lifelong learning and thereafter zero in on the kind of skills required for this. The concept is defined in some circles as “all purposeful learning activity, undertaken on an ongoing basis with the aim of improving knowledge, skills and competence” (European Commission. 2000). Lifelong learning is also defined as the continuous building of skills and knowledge throughout the life of an individual. It occurs through experiences encountered in the course of a lifetime (Wikipedia). These experiences could be formal (training, counselling, tutoring, mentorship, apprenticeship, higher education, etc.) or informal (some practical experiences, situations, etc.). Lifelong learning, sometimes referred to as LLL, is also defined as the “lifelong, voluntary, and self-motivated pursuit of knowledge for either personal or professional reasons. As such, it not only enhances social inclusion, active citizenship and personal development, but also competitiveness and employability.

We may broaden the concept a little further from the simple learning perspective to a more general education perspective. Lifelong education means education resulting from the integration of formal, non-formal, and informal education so as to create in the individual the ability for continuous lifelong development of quality of life. Learning is an essential part of life which takes place at all times and in all places. It is a continuous lifelong process, going on from birth to the end of our life, beginning with learning from families, communities, schools, religious institutions, workplaces, etc. The African traditional society envisioned lifelong learning by the roles one was expected to play in society from child, youth (boy or girl), young adult, junior elder to senior elder. Today with less defined changes in life roles there is need for new strategies to motivate lifelong learning.

Jacques Delors (1996) made a significant contribution to the debate on lifelong learning through his ‘four pillars of education for the future’. His four pillars are:

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- Learning to know - mastering learning tools rather than acquisition of structured knowledge.
- Learning to do – equipping people for the types of work needed now and in the future including innovation and adaptation of learning to future work environments.
- Learning to live together, and with others – peacefully resolving conflict, discovering other people and their cultures, fostering community capability, individual competence and capacity, economic resilience, and social inclusion.
- Learning to be – education contributing to a person’s complete development: mind and body, intelligence, sensitivity, aesthetic appreciation and spirituality.

The Jacques Delor’s pillars of education has provided the basis for yet another plausible definition for lifelong learning: i.e. “learning that is pursued throughout life: learning that is flexible, diverse and available at different times and in different places. Lifelong learning crosses sectors, promoting learning beyond traditional schooling and throughout adult life (i.e. post-compulsory education)”.

The definitions so far appear to give a humanistic perspective and not tied so much to the prospects of any economic gains. The World Bank however sees the concept from a purely economic angle and suggests economic justifications for participation in it. For example, it asserts that lifelong learning is essential for individuals to keep pace with the constantly changing global job market and technology. This approach to lifelong learning involves a combination of competencies. The Bank defines the knowledge and competencies needed for lifelong learning as: “...including basic academic skills, such as literacy foreign language, math and science skills and the ability to use information and communication technology. Workers must use these skills effectively, act autonomously and reflectively and join and function in socially heterogeneous”.

Generally, in lifelong learning, the emphasis is on learning to learn and the ability to keep learning for a lifetime. Learning is seen beyond formal educational environments and is perceived as a quality not just of individuals but also as an element of systems. The strength of this realization compelled Peter Vail () into making the statement that “*If learning involves all of one's life, in the sense of both time-span and diversity, and all of society, including its social and economic as well as its educational resources, then we must go even further than the necessary overhaul of 'educational systems' until we reach the stage of a learning society*”

A lot of informal learning takes place before children enter the primary school. During the age group 0 - 5, a lot of learning takes place and it provides very important insight into learning as a foundation for future learning habits and resourcefulness. Sigmund Freud and other behavioural psychologists insist on the critical importance of childhood learning and to them this stage affects all the other learning abilities later in life.

Learning of the 6 – 24 years age group primarily takes place in educational institutions, from primary and secondary to tertiary levels. Family life, social organizations, religious institutions, and mass media can also play a role in non-formal and informal learning during this time. The objective of learning in this period is the holistic development of learners in four aspects, namely: physical, intellectual, social capacity, emotional and mental development.

The concept and benefits of lifelong learning was popularized mainly by the United Nations Educational Scientific and Cultural Organization (UNESCO) during the 1960s and 1970s as a way of connecting the various stages of formal education and linking them with informal and non-formal learning. It was seen as a way of seeking to broaden the concept of education and foster education for all, while promoting education for both social development and economic growth. Two key publications of the time were very instrumental: UNESCO publication “Learning to Be” and Faure and Ettore Gelpi’s “Lifelong education and International Relations”

At the same time the French organization ‘Organisation for Economic Co-operation and Development’ (OECD) also promoted the concept of recurrent education, specifically to support economic growth and the up-skilling of workers in Europe. This focus reached a new momentum by 1996 through Jacques Delors’ UNESCO report: “Learning: The Treasure Within”. The report defines lifelong learning as adaptation to changes in technology and as the continuous “process of forming whole human beings- their knowledge and aptitudes, as well as the critical faculty and the ability to act.

The year 1996 was indeed designated as the European Year of Lifelong Learning to make the European public aware of the importance of lifelong learning, to foster better cooperation between education and training structures and the business community, particularly small and medium-sized enterprises, to help to establish a European area of education and training through the academic and vocational recognition of qualifications within the European Union, and to stress the contribution made by education and training to the equality of opportunities.

The motivation for people to participate in lifelong learning may vary from individual to individual and may even vary from country to country. For example, an Australian survey of participants in adult education courses identified a range of factors motivating people to undertake adult learning, such as:

- To upgrade job skills;
- To start a business;
- To learn about a subject or to extend their knowledge;
- To meet new people;
- To develop self-confidence;
- To get involved in the community; and
- To develop personal skills;
- To participate in social networking

The factors as identified in this survey would appear to confirm the suggestion that lifelong learning policies tend to promote participation in learning for its own sake rather than as a means to a specific end (i.e. employment). The goal of participation in learning thus appears to be more significant than the reason why.

Today, the global importance of lifelong learning is recognized and proclaimed almost everywhere. Globalization has produced outcomes and processes which make the learning of new skills and competencies of paramount importance. It is argued that lifelong learning can instill creativity, initiative and responsiveness in people thereby enabling them to show adaptability in post-industrial society through enhancing skills to:

- manage uncertainty,
- communicate across and within cultures, sub-cultures, families and communities, and
- negotiate conflicts

The concept of lifelong learning spans a wide range of education and training issues and speaks to many different audiences. Common themes conveyed in literature on lifelong learning articulate four characteristics which transform ‘education and training’ into the concept of ‘lifelong learning’. These are:

- It encompasses both formal and non-formal/informal types of education and training. Informal learning describes a lifelong process whereby individuals acquire attitudes, values, skills and knowledge from daily experience and the educational influences and resources in his or her environment, from family and neighbours, from work and play, from the market place, the library and the mass media.
- The importance of self-motivated learning. There is a heavy emphasis on the need for individuals to take responsibility for their own learning. According to Cassandra B. Whyte Lifelong learners are not defined by the type of education or training in which they are involved, but by the personal characteristics that lead to such involvement.
- Self-funded learning. Lifelong learners may be defined as people who take responsibility for their own learning and who are prepared to invest time, money and effort in education or training on a continuous basis. This is linked to the characteristic of self motivated learning
- A commitment to universal participation in education and training. The concept of universal participation includes both informal and formal learning for all purposes - social, economic and personal.

An individual’s ability to participate in lifelong learning is therefore conditioned by three basic requirements:

- Acquisition of the necessary skills and attitudes for learning, especially literacy and numeracy skills;
- The confidence to learn, including a sense of engagement with the education and training system; and
- Willingness and motivation to learn

These are all attributes that can be acquired in school, especially with a well tailored and implemented programme. This awareness underscores the need in Ghana to integrate lifelong learning skills into the school curriculum. The list of lifelong learning skills is in-exhaustive but the following are considered core and are therefore adopted for this study. They were selected after due consultation with the education authorities in Ghana, especially the experts in the curriculum development division.

1. Observe carefully and critically to reach an understanding of reasons underling why something is the way it is.
2. Access information effectively and efficiently from a variety of sources.
3. Read critically and assess the quality of information available (ex. Question the validity of information, including that from textbooks and teachers).

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4. Categorize and classify information to establish and show relationships.
5. Analyse new content by breaking it down, asking new questions, comparing and contrasting, recognising patterns and interpreting information.
6. Synthesize new concepts by making new connections, transferring prior Knowledge and generalizing.
7. Model by estimating, simplifying, making assumptions and approximations
8. Visualize (e.g. Create pictures in their mind that help them “see” what the words in a book describe).
9. Reason by reflecting and inferring, using inductions, questioning assumptions, using lateral thinking and inquiring.
10. Effective use of ICT for learning – is it perceived as one of the lifelong skills or as a tool for developing lifelong learning skills.

An educational programme has several elements that makes up for its quality and in this case its satisfactory claim to providing lifelong learning skills. Almost all the components of the development and implementational stages of the curriculum are critical for quality assurance. The curriculum design and development need to be visionary enough to project the child’s learning needs beyond the school and so also must be the implementation of the curriculum in the schools. Teachers need to understand and accept not only the wording but also the spirit of the curriculum. Equally important is the assessment system provided for in the curriculum and its real implementation in the schools. Allowing any gaps in between the two could be a recipe for disaster in the system.

Ideally, the rubric of the curriculum must be designed to also guide the assessment of the skills and dispositions involved in lifelong learning. Assignments that encourage students to reflect on how they incorporate their lifelong learning skills into their work samples or collections of work by applying the lifelong learning skills and dispositions will provide the means for assessing those criteria. Work samples or collections of work reflect what is known or can be done by students, while reflections tell what students think, feel or perceive. Reflection provides the evaluator with a much better understanding of who students are because through reflection students share how they feel about or make sense of their learning experiences. Reflection allows analysis and interpretation of the work samples or collections of work for the reader. Reflection also allows exploration of alternatives, the consideration of future plans, and provides evidence related to students' growth and development. Perhaps the best fit for this rubric are those assignments that prompt the integration of experience beyond the classroom.

1.4 ICT Integration into the School Curricula

Information, Communication and Technology has made tremendous advances which could effectively be put to advantage to enhance educational delivery. Many Ministries of Education has recognised this potential and have reformed their educational system take advantage. In a case study of some pioneer schools in ICT integration (Boakyi K & Banini, A.D, 2006) it was discovered that some schools in both the public and private sector in the education industry had taken advantage of the ICT innovation and were making good progress. Their study identified ICT integration approaches being applied to include the use of pre-identified websites for teaching and learning right off the internet, the use of interactive CD ROMs, as well as, teaching children to do presentations or research with the

help of the computer. It also involved the use of the PowerPoint software to teach as well as referring pupils and students to some radio programmes which were considered educative.

The study identified some positive effects of ICT integration to include “increased teacher-student interaction, pupil/student-centred learning, increased level of capability on the part of students to do independent learning and the practicalisation of hitherto theoretical and abstract concepts on the part of both students and teachers”. They however raised some critical issues about the sustainability of the ICT integration innovation. These included the high cost of maintenance of computers, high utility bills, power fluctuations and poor telecommunication networks.

Several other Studies have shown that pupils learn more with ICT than without it. Shutte (1999), Haugher and Anderson (1999), Proctor and Richardson (1997) and Jonassen (1996), have all demonstrated that the new technology represents a unique and fascinating option in the teaching and learning process. ‘The advantages are many in terms of flexibility, accessibility, increasing communication and interactions, as well as, a variety in the modes of teaching and learning. ICT integration results in more effective learning, improved teaching more suited to the daily realities for the pupils, better leadership of administrators.....and members of the Community in the School life.

1.5 The Research Problem

The design of any school curriculum is critical to the school system achieving its national goals and objectives. This is particularly so when the school system is centralised. The design is usually based on the felt manpower and socioeconomic needs of the country. However, unless there is a high level of agreement on the premium put on the aims and objectives of the programme between the designers and implementers, the outcome is likely to fall short of expectation. Thus though adequate provision could have been made for the development of lifelong learning skills in the school curriculum, the excessive desire for certification by both teachers and pupils could divert attention from the development of lifelong learning skills to only cognitive development to pass examinations. This is the potential problem this study sought to investigate.

1.6 Research Questions

The following research questions were addressed in the course of the study:

1. Do the basic education curricula in Ghana and Mali make adequate provision for the development of core lifelong learning skills?
2. Do the basic education curricula in Ghana and in Mali make provision for the integration of ICT into the school curriculum?
3. Which lifelong learning skills do education authorities consider as core skills?
4. Are teachers aware of the importance of these core lifelong learning skills provided for in the syllabuses?
5. Do teachers teach for their pupils’ development of these core lifelong learning skills?
6. Do teachers integrate ICT into their implementation of the syllabuses for a greater impact/outcome?
7. What were the major challenges inhibiting the:
 - a) Integration of ICT into the school curricula?
 - b) Teaching for lifelong Learning Skills Development in Schools?

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1.7 The Study Objectives

The study, in its attempt to address the research questions identified above, sought to achieve the following objectives:

1. To identify lifelong learning skills contained in the basic school curriculum and the degree of success in developing them during the curriculum implementation.
2. To identify policies and experiences in Ghanaian and Malian education curricula that have the potential to promote the development of lifelong learning skills in the school system, with particular focus on the systematic application of ICT for enhanced and sustained lifelong learning skills development
3. To propose and share best practices (transnational experiences) in the use of ICT in pedagogy for enhanced and sustained development of core skills for lifelong learning.
4. To compare the application of ICT for lifelong learning skills development among institutions and between Anglophone and Francophone systems of basic education (if possible).
5. To document relevant literature on the application of ICT for the development of core skills for lifelong learning from the African perspective

1.8 Expected/Anticipated Results

At the planning stage of this study it was expected that the study would:

1. Highlight existing policies and experiences of lifelong learning with particular focus on the systematic application of ICT for enhanced and sustained lifelong learning skills development.
2. Clearly delineate the core lifelong learning skills contained in the basic school curriculum.
3. Ultimately improve the quality of learning for learners throughout life (lifelong learning) in both Ghana Mali.
1. Propose best practices in the use of ICT application for enhanced and sustained development of core skills for lifelong learning.
2. Recommend best practices of ICT in pedagogy for enhanced skills for lifelong learning.
3. Showcase the similarities and differences between institutions and countries in the application of ICT for lifelong learning skills among institutions and countries.
4. Document relevant literature on the application of ICT for the development of core skills for lifelong learning from the African perspective.
5. Advocate and share best practices in transnational experiences on the integration of ICT for enhanced core skills development for lifelong learning.
6. Act as an empirical basis for strategizing and furthering the use of ICT in developing and integrating lifelong learning skills.

4. Chapter Two

2.0 Methodology

This study is primarily a case study of three basic schools (purposely selected) in two educational systems - two basic schools in Ghana and one in Mali. It was designed specifically as a qualitative study to generate qualitative detailed information rather than quantitative data.

Schools selected in Ghana are School 5 of the Kanda Estate Cluster of schools (public) and the Jack and Jill Preparatory School (private). The selection of the Kanda estate school was based on the recommendation of the ICT Unit of the Ministry of Education. The school selected in the Republic of Mali is the Kalabancoura school located in the Bamako District. Both first and second cycle levels of these schools were studied. As with the Kanda Estate Schools, Kalabancoura also is a cluster of eight primary (grades 1 – 6) and seven grades 7 to 9 schools. School ‘A’ of primary level and School ‘I’ of grades 7 – 9 level schools were selected. Funding constraint did not allow for the use of more than one school in Mali. All three schools were known (or believed) to have adopted the use of ICT in their pedagogy at one time or another and this was an important criterion for their selection. The population consisted of the head- teachers and all teachers and learners in the schools in both countries. It also included educational authorities in the districts of the selected schools and the Director and staff of the Curriculum Research and Development Division who are the designers of the school curricula.

Through stratified-random sampling, seven teachers in addition to the head-teacher (and the circuit supervisor in one instance) were selected in each school for the study in Ghana. Teachers selected were those teaching class four to six of the primary school (primary school teachers are class teachers teaching all subjects and not specialised subject teachers) and a teacher each of English Language, Mathematics, Integrated Science and Social Studies in the junior high schools. For the purpose of monitoring/observing the teaching process in the classes, teachers of the selected subjects at the junior high school and lessons in English Language, Mathematics, Integrated Science and Civic Education were selected purposely mainly because these are considered the key subjects at the basic education level. Finally, forty pupils per each school were selected to participate in focus group discussions.

In summary, two full basic schools (primary and JSH) were selected in Ghana. The head-teacher of each school in addition to seven teachers and forty pupils participated in the study. The selected teachers were Primary class four to six teachers and junior high school teachers teaching English, Mathematics, Integrated Science and Social Studies.

In the Malian situation, four teachers of the first cycle school, including grades 5 and 6 teachers and six from the grades 7 – 9 level were selected for study.

Five survey data capturing instruments were developed, validated through peer review and used for data collection. Instruments used were:

- a) Teachers’ Monitoring /Observation Guide

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- b) Interview schedule for school heads and Education Authorities
- c) Questionnaire for teachers
- d) FGD Guide for pupils, and
- e) Syllabus Review Guide for review of selected subjects at both the primary and junior high school levels (i.e. English Language, Mathematics, Integrated Science and Citizenship Education/ Social Studies)

Analyses of the school syllabuses of the selected subjects were undertaken with the view to identifying or ascertaining elements of and provisions for the development of core skills for lifelong learning and how ICT is to be applied to enhance their acquisition. Comparative data analysis (among schools, levels and among countries) was done.

The survey was conducted in two ‘full’ basic schools in Ghana – one public and one private and a public school in Mali. Each full basic school in Ghana consists of a primary school (of 6 years) and a junior high school (of 3 years), making two schools in one. The structure was similar to the structure in Mali where the first cycle is made up of primary 1 – 6 and grades 7 – 9.

The collection of the survey data involved the following activities:

- Researchers observed and recorded pedagogical information on three teachers at each primary school - classes 4, 5 and 6 teachers. Each teacher was observed three times in three of the selected subjects and the lessons for observation were selected such that each of the selected subjects was observed in at least two different classes to ensure a balanced observation. Three primary school teachers were similarly used in Mali.
- Similarly, in each junior high school (in Ghana) and the grades 7 – 9 school in Mali, the researchers observed and recorded pedagogical practices of four teachers of the core subjects. Teachers at the JHS are specialised subject teachers. As a rule, it was only the head-teachers who had a pre-knowledge of the programmed observations as the researchers were careful to avoid any staged teachings. Each teacher was observed twice to ensure a fair appraisal. For any given observation, there were two researchers who sat in and compared their notes thereafter.
- Each class observation was preceded by an inspection of the teacher’s scheme of work and lesson notes. The objectives a teacher sets out to achieve should normally be contained in the lesson notes and could also provide a clue to whether or not lifelong learning skills were being taught.

The other component of the survey was the administration of questionnaires and interviews. While teachers filled questionnaires about the curriculum and their pedagogy, (their awareness of core skills for lifelong learning, how far the curricula has provided for the development of these skills and their reliance and application of ICT in their teaching) the heads of schools were taken through interviews to provide similar information and also give their impression about the extent to which their teachers were integrating ICT in their teaching. Eight teachers and the head-teacher were involved in this exercise at Kalabancoura.

Focus Group Discussions were also organised for pupils on class basis. In each school in the Ghana situation, four focus groups, each of five boys and five girls were organised. On the other hand eight FGDs were organised in Kalabancoura and it involved forty girls and forty boys ranging from grade 5 to 8. The focus for these FGDs was mainly on their perceptions about their teachers’ teaching, general teaching-learning interactions, purpose of schooling,

when learning ends and the application of ICT in teaching by their teachers as well as their own use or anticipated use of ICT for learning.

Data generated, as expected, was mainly qualitative and was therefore analysed using qualitative methods. The documents were analysed to track relevant portions, statements and key words in the syllabuses while the schemes of work and lesson notes of teachers were manually reviewed to identify planned teaching methods that were related to lifelong learning skills development. Recorded responses from the interviews and the FGDs were augmented with additional information, especially from the probing questions which were contained in the tape recorded versions of the sessions and thereafter analysed.

5. Chapter Three

3.0 Results and Discussions

3.1 Curricula Provisions for Lifelong Learning Skills and ICT Integration

Research Question 1: Do the basic education curricula in Ghana and Mali make adequate provision for the development of core lifelong learning skills?

Research Question 2: Do the basic education curricula in Ghana and in Mali make provision for the integration of ICT into the school curriculum?

The national curriculum in Ghana, designed by the Curriculum Research and Development Division (CRDD), is structured as follows:

- At the Primary School Level the subject constituting the curriculum comprise Ghanaian Languages and Culture, Religious and Moral Education (RME), English Language, Mathematics, Physical Education, Information and Communications Technology (ICT), Natural Science and Creative Arts (at the lower primary level) and the same subjects in addition to Citizenship Education and Integrated Science (at the upper primary level. According to MOESS, (2008), “Creative Arts comprising Art and Craft, Music and Dance, Physical Education and ICT should be taught as practical and creative activities”
- At the junior high school level the curriculum comprise the following subjects: Ghanaian Languages and Culture, English Language, Mathematics, Physical Education, Social Studies, French, Basic Design and Technology (BDT) and Integrated Science.
- In Mali, the national curriculum for primary schools designed by the National Direction of Pedagogy (formerly National Pedagogical Institute) is structured into eight learning areas as follows:
 1. French (language, reading, written expression, writing)
 2. Mathematics (arithmetic, geometry, measures)
 3. Stimulation activities “activités d’éveil” (observation sciences, history and geography, civic and moral education)
 4. Family economic “économie familiale” (foods, domestic economy, child care, needlework)
 5. Technology (knives, boxes, paint, cement, glue, menuis plane, saw, wire)
 6. Music (music theory, tonic, intonation, music history)
 7. Art (drawing, painting, color, decoration)
 8. Physical and sport education
- The grades 7 – 9 curriculum is broken down into nine learning areas (subjects) thus: Mathematics, Physics, Chemistry, Biology, French, History, Geography, Geology and English.

Provisions made for the development of lifelong learning skills and the application of ICT to teach the skills at the basic school level as reflected in research questions one and two were traced to the basic school curricula in Ghana and Mali. The analyses have shown that the curriculum developers were particularly aware of and planned for the development of lifelong learning skills, though emphasis on the skills differ from country to country and from subject area to subject area as can be seen from the report of the analyses on the syllabuses of the various subjects.

Education has undergone series of reforms in both countries with key objectives which cut across both countries. For instance, each reform programme aimed to diversify the school curriculum to make education more meaningful to real life situations for the pupils and also to ensure sustainable national development. Curriculum diversification is an avenue to help pupils identify their interest areas and potentials which should constitute the bed-rock of their ceaseless learning and development. The most recent introductions into the reform, in addition to ensuring education relevance for the present and the future, have also targeted taking advantage of technological improvement to enhance the education delivery system.

For instance, Law No. 99-046 of December 1999 which was an amendment to the National Education Policy in Mali, provided thus: *“the school has for mission to educate, to instruct, to socialize and to qualify women and men in order to permit them to drive their personal and collective, civic and professional life”*. The policy goes on and has been interpreted as follows: *“The Malian education system must produce patriotic citizens and builders of a democratic society, It must produce development oriented citizens who have respect for culture, opened to universal civilization and able to integrate scientific and technological knowledge and expertise to advantage.”*. The lesson plans of French, Mathematics or History put an accent on lifelong learning in as far as the learners (pupils) of today may be the development agents tomorrow *“able to integrate knowledge and expertise to the scientific progress, techniques and to the modern technology”*. The implementation status was however quite different from the provisions and plans made.

In the Malian basic education curricula, no mention has been made of ICT literacy, much less its use for teaching and learning. The school selected for this study however had something close to a computer room but which usage fell outside the scope of the normal curricula. There also was internet connectivity in the school. The coordinator of the Kalabankoura cluster of schools had this to say: *“ICT was introduced into the cluster of schools here in 2007 through the support of Canadians and the Japanese partners under the auspices of ‘International Initiative for Twinship schools’ project. But unfortunately, there is no mention of ICT in the public basic schools curricula. Having a computer room in this school is a big step for us for, everybody is conscious about the importance”* According to her (coordinator) she was not sure of the existence of a similar computer room in any other school since it was not a Government or Ministry policy. Whether ICT integration would become a policy in the very near future, the coordinator could not tell. Teachers and pupils of this school were however unanimous to recognize the key role that ICTs could play in promoting teaching and learning.

Analysis of the various curricula and observations of their implementation in the classroom has shown that though provision has been generally made for ICT integration in the school curricula in Ghana, its implementation is at a very infant stage with majority of the first line implementers – i.e. teachers – unfamiliar with what is to be integrated and how it should be integrated. A similar statement was made in 2006 when the ICT pioneer schools study was conducted. This will suggest that the pace of developing the innovation is very slow, especially at Jack and Jill school which was also one of the schools studied in the earlier study.

The deductions made and conclusions reached about the Ghanaian situation (provisions for lifelong learning skills and integration of ICT) were based on the following analyses of the selected key subjects:

1) English Language

By its nature and by its diversified importance to the whole business of education, English Language may perhaps be considered the singularly most significant tool endowed with multiple skills for lifelong learning. Virtually all continuing education efforts after basic education, whether formal, informal or non-formal, do need an English Language or French background as the case may be. Reading newspapers to be current with daily happenings, reading books of all kinds, exploring the internet for information, discussing or communicating on issues with people of diversified ethnic

backgrounds etc, all demand some level of language (English in the case of Ghana) and communication skills. Above all, English is the most widely used international language on the internet and provides the greatest opportunity for lifelong learning.

The primary and junior high school syllabuses, in principle, have made adequate provision for endowing pupils with the requisite basic skills in the language area for pupils' continuing use for further educating themselves after basic education. The General Aims of the subject as stated in the primary school syllabus which are found relevant to lifelong learning is to help the pupil to:

- develop the basic language skills of listening, speaking, reading and writing;
- attain high proficiency in English to help him/her in the study of other subjects as well as in the study of English at higher levels;
- cultivate the habit of and interest in reading;
- communicate effectively in English; and
- develop confidence and skills in listening and speaking

Specific objectives stated in the syllabuses which promote lifelong learning skills include the following: Helping pupils to:

- listen attentively to simple instructions and carry them out;
- describe objects accurately;
- give accurate directions;
- read, understand and derive information from texts of varied nature;
- make polite requests using "please", "excuse me", "may I", "can I";
- listen and make meaning of texts heard;
- read silently and reasonably fast;
- summarize passages read;
- write simple stories with logical arrangement of facts or ideas
- develop interest in, and acquire the habit of reading for pleasure and for academic purposes';
- predict the sequence of events in a story;
- develop listening skills;
- Develop skills to generate and organise ideas logically;
- give brief oral reports/account of events and activities;

A key concept of the junior high school syllabus is the integrated approach to the teaching of skills. The syllabuses stresses the need for the teachers to remember that the receptive (listening and reading) and the productive (speaking and writing) skills are interrelated and hence complementary. Thus, for example, a reading lesson must provide ample opportunity for the practice of related listening, speaking and writing skills. Similarly, pupils are implored to always bear in mind that grammar is taught to be applied in speech and in writing.

Another issue that is worthy of note is the integration of laudable human values. Small doses of these values are fused into literature and composition as well as reading and oral work. These values are important skills required for lifelong learning and image building.

What was found lacking in the syllabuses is any reference to the use or application of ICT for teaching and learning. It was therefore inferred that the syllabus designers had not anticipated and provided for ICT becoming a tool for enhanced teaching and learning. This might not help the course of pupils making a habit of searching for language solutions on the internet.

2) Mathematics

The Mathematics syllabuses were found to have made adequate provision for the teaching and development of the lifelong learning skills. They emphasize mathematical knowledge and skills that should help the young person to develop basic numeracy competence to be able to function effectively in society. Modern life demands that young people should be able to use numbers competently, read and interpret numeral data, reason logically, solve problems involving calculations and mathematical

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reasoning, as well as communicate effectively with other people using accurate mathematical data and interpretations. These are the necessary skills required of young people to enhance their chances for taking advantage of the numerous opportunities in the fields of science, engineering, technology and in other areas in manufacturing.

Indeed, the syllabuses (primary and junior high school) have been designed with an aim to prevent rote memorization by pupils and rather emphasize the proper development and use of mathematical concepts, skills and reasoning techniques in problem solving. These are all high level skills for lifelong learning and survival.

In the primary school Mathematics syllabus the development of lifelong learning skills is reflected more in the General Aims. The most relevant aims in this regard are:

- Reason logically by selecting and applying criteria for classification and generalization.
- Communicate effectively using mathematical terms and symbols.
- Use appropriate instruments for various systems of measurement.
- Carry out investigations using various mathematical ideas and operations.
- Develop the habits of diligence, perseverance, confidence and precision as a result of their mathematical training.

The junior high school syllabus is designed to put great deal of emphases on the development and use of basic mathematical knowledge and skills. As with the primary school syllabus, lifelong learning skills are reflected more in the General Aims section than at the other component parts of the syllabus. Seven of nine stated General Aims are closely related to lifelong learning skills development. These are:

- Develop the skills of selecting and applying criteria for classification and generalization.
- Communicate effectively using mathematical terms, symbols and explanations through logical reasoning.
- Use mathematics in daily life by recognizing and applying appropriate mathematical problem-solving strategies.
- Understand the process of measurement and acquire skills in using appropriate measuring instruments.
- Develop the ability and willingness to perform investigations using various mathematical ideas and operations.
- Work co-operatively with other students to carry out activities and projects in mathematics and consequently develop the values of cooperation, tolerance and diligence.
- Use the calculator and the computer for problem solving and investigation of real life situations

Emphasis is significantly put on the fact that *“the pupil is expected at the junior high school level to move beyond and use mathematical ideas in investigating real life situations. The strong mathematical competencies developed at this level are necessary requirements for effective study in mathematics, science, commerce, industry and a variety of other professions and vocations for pupils terminating their education at the junior high school level as well as for those continuing into tertiary education and beyond”*.

The designers of the syllabuses were conscious of a risk in the implementation of the syllabuses. Teachers could focus attention on only the specific objectives which mainly constitute their areas of assessment and ignore or gross over the not easily assessable skills contained in the general aims and objectives. This is the reason why there is that proviso in the syllabus *“After teaching all the units for the year, go back and read the general aims and general objectives again to be sure you have covered*

both of them adequately in the course of your teaching". The question that may be of interest here is: Do teacher take this admonition seriously and go back to read?

There are instances in the syllabuses however when some specific objectives reflect the development of core lifelong learning skills. For example, the topic 'Collecting and Handling Data' (in the primary school syllabus) is to be introduced in a manner that requires pupils to collect data from various sources and then learn to organize, represent and interpret the information gathered. Also, the development and use of estimation skills which are life-long in nature are emphasized both in numerical operations and measurement of capacity, mass, time, money, length, area and volume. For example, let us take a look at the following directive to teachers in the syllabus: "*Guide pupils to estimate the duration of an event in minutes and verify by measuring with ordinary or digital clock/watch; encourage pupils to cultivate habit of time consciousness; estimate fractions or percentages and also distances*"

There are other areas in the primary school syllabus where the development of some lifelong learning skills was targeted. This is a quote from one of such areas – definition of profile dimension -: "*For there to be any change in the quality of people who go through the school system, pupils should be encouraged (by teachers) to apply their knowledge, develop analytical thinking skills, develop plans, generate new and creative ideas and solutions, and use their knowledge in a variety of ways to solve mathematical problems while still in school.*

Unfortunately though, the deployment of ICT to enhance the teaching and learning process has not been mentioned in the syllabus.

3) Integrated Science

The integrated science programme, as a component of the basic education curriculum, has made adequate provision, at least in theory, for the teaching and learning of lifelong learning skills. The programme is designed to equip the young person of today who will be the adult of tomorrow with the necessary process skills and attitudes that would provide either a strong foundation for further study in science at the higher level and beyond or the interest and inclination toward the pursuit of scientific work. Broadly put, the programme was designed to develop in pupils:

- the spirit of curiosity, creativity and critical thinking.
- skills, habits of mind and attitudes necessary for scientific inquiry.
- the spirit of curiosity for investigating and understanding their environment.

The inclusion of science in the basic education curricula was justified in the following words which are of relevance to lifelong learning skills: "the study of science also provides excellent opportunities for the development of positive attitudes and values". The junior high school syllabus goes on to point out the following attitudes and values as desired attitudes in the study of science at this level:

- curiosity to explore their environment and question what they find;
- keenness to identify and answer questions through investigations;
- creativity in suggesting new and relevant ways to solve problems;
- open-mindedness to accept all knowledge as tentative and to change their view if the evidence is convincing;
- perseverance and patience in pursuing a problem until a satisfying solution is found;
- concern for living things and awareness of the responsibility they have for the quality of the environment;
- honesty, truthfulness and accuracy in recording and reporting scientific information; and
- love, respect and appreciation for nature and desire to conserve natural balance.

The syllabuses at both the primary and junior high school levels acknowledges and emphasizes the fact that the development of observational and communication skills was key to a successful study of

Natural Science at this level. These skills are core lifelong learning skills whose importance to the continuing learning and development of the individual extends without ceasing into adulthood. Generally, as in English and Mathematics syllabuses, the core lifelong learning skills are mentioned more under the General Aims of the syllabuses than under General or Specific Objectives. For example, three of ten stated general aims of integrated science at the junior high school were found not only closely related to lifelong learning skills but also sustainable development and were as follows:

- develop a scientific way of life through curiosity and investigative habits
- take preventive measures against common tropical diseases
- live a healthy lifestyle

The primary level syllabus identified two important reasons for recommending activity-oriented approach to teaching the Natural Science. First, the activity approach, it was argued, challenges the pupils to develop their own ideas. Secondly it makes the subject more meaningful and relevant to them. For example, it was suggested that if right from age six, lessons engage pupils in analytical thinking and practical scientific problem solving techniques, their capacity in these skilled areas and for applying knowledge to problems and issues would be enhanced. The syllabus emphasized the need for teachers to expose pupils to situations that challenge them to raise questions and strive to solve problems. At the junior high school level teachers are encouraged to help pupils to learn to compare, classify, analyze, look for patterns, spot relationships and come to their own conclusions/deductions.

The appropriate emphasis on the development of lifelong learning skills has also been shown in the suggested evaluation scheme. While “knowledge and understanding” and “application of knowledge”, have been given equal weighting, greater weighting has been given to the development of “attitudes and process skills”. These are very commendable provision on paper but their implementation is what really determines the output.

Basic process skills to emphasize in integrated science, according to the designers of the syllabus include planning, designing the experiment, observing, measuring, evaluating, generalizing, communicating, analyzing, generating and classifying. At the junior high school level, some specific skills required for effective experimental and process work were stated as needing attention for development. They include: equipment handling, planning and designing of experiments, observing, manipulating, classifying, drawing, designing, measuring, interpreting, recording, reporting and conduct in laboratory/field.

All these skills will continue to be handy and useful to the child even after school and they are the skills that endow on any economy the feature of sustainable development.

4) Civic Education & Social Studies

Citizenship Education and Social Studies are core subjects at the primary and junior high schools respectively with similar aims, objectives and focus. Adequate provision is made for the acquisition of some core lifelong learning skills while at the same time some level of emphasis has been placed on encouraging teachers to deploy the use of ICT in their various classes to enhance the teaching and learning process.

Citizenship Education, a primary school programme, seeks generally to guide pupils to develop critical thinking skills and to build attitudes and values needed to make them become good productive members of any community and equip them to be able to solve personal and societal problems. With this in mind, the syllabus introduces the child to critical and reflective thinking, decision making, positive attitude towards development and value building. Pupils are expected to be endowed with the following skills and attributes:

- National Commitment: - determination to contribute to national development.
- Tolerance: - willingness to respect the views of others.
- Patriotism: - readiness to defend the nation.
- Flexibility in ideas: - willingness to change opinion in the face of more plausible evidence.

Emphasis is also placed on the development of good inter-personal relationships which helps in promoting peace, unity and harmony in the community. These are all considered ingredients of a solid foundation for peaceful co-existence of people for sustainable development. The syllabus recommended the development of inter-personal relationships through the following: a smile, good communication; e.g. exchanging greetings, making new friends, helping people, being respectful, respecting the views of other people. The developers of the syllabus moved a step further to identify the skills needed to sustain good inter-personal relationships. Those mentioned include: being polite to people; trustworthiness; rendering apology, e.g. saying 'Sorry'; being respectful and having positive attitudes towards others e.g. tolerance and empathy towards others.

Other lifelong learning skills provided for in the primary school citizenship education syllabus include observation, critical analysis of issues in given situations, skills for consultation during times of challenges and skills for time management. The syllabus positively identifies with the need for developing lifelong learning skills in as far as it demands that teachers train the pupils to develop their own visions for their future and begin to work towards achieving them. The recommended ways of doing this include helping pupils to:

- set life goals.
- pay attention to training/apprenticeship.
- continue education or training on the job.
- develop good work attitudes/ethics such as hard work, reliability, diligence, commitment to duty, punctuality etc.
- develop positive attitudes about life (perseverance, honesty, reliability, trustworthiness etc.).
- form habit of regular savings.
- identify and develop their talents.

The junior high school Social Studies syllabus equally placed a great deal of emphasis on the development of not only knowledge but also skills and attitudes needed for personal growth, peaceful co-existence, and respect for peoples of other nations. The point was also made under the General Aims that pupils must be taught valuable skills and attitudes and must above all be taught to be problem solvers. Indeed, problem solving is a lifelong activity and a useful tool for sustainable development.

The following are examples of some of the specific objectives in the social studies syllabus:

- Pupils to visit a Community Dispute Resolution Centre or Social Welfare Office and report on how these institutions resolve disputes
- Teacher takes pupils out to observe some or any of the environmental problems in the content.
- Guide pupils to explain the need to sustain unity among the various ethnic groups of Ghana.
- Pupils discuss ways of sustaining peace, stability, unity and development in Ghana
- Pupils to search for the meaning of independence from various sources.
- Analyse ways by which human rights abuses can be prevented.
- Pupils will develop the habit of savings
- Plan a class visit to some selected local sceneries, for them to observe and make notes on their beauty, peculiarities and importance
- Analyze the effects of rapid population growth in Ghana on the family, the

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- community and the nation
- Pupils in groups to investigate the ages of members of their families and illustrate the results on a bar graph.
- Let pupils in groups, use survey and interview methods to collect information from selected agencies for class report
- Pupils in groups, to design a programme for the sustainable use of the natural resources listed in content.

Skills for conflict prevention and management in the family and indeed the society (peace building skills) which the syllabuses identified and provided for include fairness to all sides, good listening skills, giving everyone a hearing, showing interest in what is being said, encouraging people to say what they feel and what hurts them, giving appropriate responses and learning always to play the neutral and objective role during differences among people.

Similarly, a number of individual attitudes which promote peace were recommended at various stages in the social studies syllabus to guide teachers in the attitude development of pupils. They include forgiveness, tolerance, love for others, respect for other people's views, avoiding ethnic superiority, avoiding derogatory remarks, cooperation and empathy.

The integration of ICT to enhance the teaching and learning process was mentioned in the syllabus. The syllabus encouraged teachers to help pupils to use various ICT sources and newspapers to find information for instance on reported cases of domestic violence and conflict, how to manage resources, and thereafter present their findings in class. There are other areas, especially at the junior high school level, where ICT application to teaching and learning was recommended.

The following specific objectives and directives relating to ICT are quoted from the social studies

- “If the Internet is available in the community, help pupils to use it to see how people in other countries are solving the problem of environmental degradation”
- “Use the internet to read about how other countries are adding value to their primary products”
- “Investigation: Find out from various sources such as TV, Radio, Newspapers on issues of corruption and report in class”
- “View situations of natural disasters from the internet and books”.
- Research on avenues for savings and investment from the internet
- Read on technologies in agriculture from the internet if available.
- Pupils to use the internet to assist in the study of land forms and volcanic eruptions where possible

3.2 Core Lifelong Learning Skills as Perceived by Teachers and Education Authorities

Research Question 3: Which lifelong learning skills do education authorities consider as core skills?

Research Question 4: Are teachers aware of the importance of these core lifelong learning skills provided for in the syllabuses?

The search for the premium attached to various lifelong learning skills by the various education authorities, including teachers, is reflected in research questions three and four. Question three sought to identify the skills that are considered key while question four attempted to assess teachers' awareness of lifelong learning skills as integrated in the syllabuses and what degree of importance they attached to them in their work. Information gathering to address these issues was triangulated

using information from various sources - interviews, questionnaire, focus group discussions and direct observation of class interactions.

The education authorities interviewed were generally familiar with the term lifelong learning skills but did not bother much to find out exactly what it meant, what is involved and whether teaching at the school level is directed towards achieving them. They showed awareness, understanding and enthusiasm in the concept only after they were shown a list of some lifelong learning skills. There was, however, an exception. Officers of the Curriculum Research and Development Division were found to be very much at home with the concept and were able to provide adequate justification for the inclusion of these skills as important aspect of the educational goals and objectives. They had mounted some orientation courses for teachers when the syllabuses were introduced and they had hoped that teachers had understood the concept. They had however not made any follow up studies or monitoring to assess the extent to which pupils were being assisted to acquire them.

The head-teachers in the two schools in Ghana were also sufficiently informed on the concept. They however did not make any specific attempts to verify whether provision was made by teachers in their lesson plans for the development of lifelong learning skills nor monitor to ensure their development because they felt that most of the lifelong learning skills were not skills that could be taught directly but rather acquired. They however ensured that teachers satisfied the minimum requirement of class exercises and other assignments that were pre-requisite for developing some of the skills. They admitted however that the school system did not make time and room for them (head-teachers) to verify the quality of teachers exercises and assignments.

Teachers at both primary and junior high schools in the study were found to be sufficiently aware of the concept of lifelong learning skills but were hardly able, individually, to give examples beyond two lifelong learning skills. The skills common among the examples they gave were; fast reading, reading with understanding, concentration, recognising, comparing and contrasting, asking questions and careful observation. Some of them could not say with certainty whether these skills were targeted in the syllabuses they use. Interestingly, the primary school teachers were more familiar with the skills that fall into the category of lifelong learning skills than the junior high school teachers. Five of the six primary school teachers (in Ghana) were familiar with the concept and some of the specific skills. Among the primary school teachers, however, those teaching in the public school appeared to be better informed and had better understanding of the concept. This was not surprising as public school teachers were generally better qualified than private school teachers in Ghana.

The review of the schemes of work and lesson notes (lesson plans) of teachers was also indicative of teachers' relatively high level of awareness (not necessarily understanding) of lifelong learning skills. All teachers at both the primary and the junior high schools had objectives in their lesson notes, in particular, which relate to the development of lifelong learning skills. Those identified included careful observation, enquiry, careful and critical assessment of information, visualizing, classifying, categorizing, scrutinizing, estimating and even the use of internet to search for information. It was apparent that they brought the development of these skills into their teaching and learning activities without fully understanding their intrinsic value and importance – preparing the pupils for lifelong learning.

Indeed, the teachers interviewed did not seem to know any clear distinction between lifelong learning skills and employable skills. Also, because skills such as reading and writing also serve the examination purpose, some of the teachers would not accept them as lifelong learning skills. Some of them had the erroneous notion that lifelong learning skills become usable only after leaving school. Interestingly, when asked to name any other lifelong learning skills apart from those listed as an appendix to their questionnaire, one teacher had summed the entire concept in one skill. He said: “the skill to acquire knowledge without the direction of any teacher”. He apparently did not know that

several individual skills and attributes are pulled together to make it possible for the child to be able to continue learning without a teacher.

The attention of the various subject teachers and also the class teachers was drawn to some of the objectives in their syllabuses that could be linked to the development of lifelong learning skills. Those skills as identified in the analysis of the various syllabuses include objectives like helping pupils to develop skills of tolerance, patriotism, dedication and commitment, flexibility in ideas, honesty, reliability and hard work. They were asked to tell how they tailored their lessons to achieve such objectives. Their response was a re-echo of what the curriculum developers had told us: “These skills are not taught as such. They developed naturally as pupils are exposed to and placed in appropriate situations or circumstances in which they would have to apply the skills”. The pupils’ ability to develop the skills was therefore dependent on the skill with which the teacher was able to create the ‘appropriate enabling context or task environment’.

Our impression about teachers’ consciousness of lifelong learning skills is that because the primary school teachers were class teachers teaching all subjects, they had the opportunity, or was it a responsibility, to pay greater attention to the introductory parts of all the syllabuses which in particular elaborate well on the non-examinable skills. Class teachers tended to pay greater attention to all other component parts of the syllabus which could give them a better understanding of the total learning programme for the class. Primary school teachers also had no external examination pressures to contend with.

The JHS teachers, on the other hand, were subject teachers with the prospect of having to prepare their pupils for the Basic Education Certificate Examination (BECE), within an alleged inadequate time span. The temptation on them to ignore areas they perceived to be unimportant, for external examination purposes, was very high. Needless to point out that it was precisely because of such temptations to neglect areas of the syllabuses that are not externally examined that the continuous assessment scheme was introduced into the basic education system since 1987. Unfortunately, rather than make continuous assessment complementary to the external assessment (Basic Education Certificate Examination) for a more holistic assessment of pupils, it has become a replica of it - assessing the same skills as does the external examinations.

Views of pupils were sought on why they choose to be in school, whether they enjoy school and whether they were learning things that they considered beneficial for the future. Their responses were expected to give an indication of their value system with education. In all the focus group discussions in both Ghana and Mali, there was virtual consensus among all groups about pupils’ affirmation that they were in school at their own free will and that they were glad to be in school. The responses of the Ghanaian pupils revealed also that most of them (more than 50% in each group in Ghana) were in school not only because schooling opens doors of opportunities to them in future but also because their education would be beneficial to their towns and the country as a whole. This impression was not created in the responses of the Malian pupils. This might not necessarily mean that they were not conscious of this.

The sentiment expressed by pupils of Kalabancoura in Mali was not very different except that they were mostly personal or self oriented. Let us take some examples of their responses on why they were in school:

- *I enjoy coming to school so that some day, I will contribute to build my Mali”*
- *School is my second home”*
- *All my family attended school and got diplomas, why should I be left out ?*
- *To come to school is a necessity for me*
- *I am very much ambitious to become a physician*
- *As for me, my mom didn’t go to school and she regrets it a lot. I don’t want to be like her.*

- *We are 5 kids in my house and everybody enjoys coming to school*
- *I want to be an engineer to grow rice for my country*

3.3 Teaching for the Development of Lifelong Learning Skills

Research Question 5: Do teachers teach for their pupils' development of these core lifelong learning skills?

This research question sought to establish the agreement between the curriculum plan and the curriculum implementation. In most cases it was found to be more effective to create an enabling environment for pupils to learn or acquire lifelong learning skills than to attempt to directly teach to impact these skills. Rather than provide for the development of lifelong learning skills through direct class interactions, it was deduced that the development of these skills, if they did occur, was most likely through various class exercises, projects and assignments which teachers gave to their pupils. Indeed, that was the anticipation of the curriculum developers. In designing the syllabuses, they had not expected that teachers would devote any specific time to teach for the development of lifelong learning skills. The skills were intrinsic attributes of the syllabuses and were expected to be developed naturally by pupils as they got exposed during lessons to various challenging situations where they would be expected to exercise the use of any or some of the lifelong learning skills, depending on the circumstance. This is where the atmosphere of the class interactions, the type and quality of questions the teacher asks, the type and frequency of class exercises and assignments he/she gives and the sacrifice he/she makes in going the extra mile to discuss pupils' marked scripts with them become really critical. Indeed, if a teacher will not have time to mark pupils' assignments without undue delay and discuss the marked scripts with them then it would have been better if the assignment were not given at all.

In the two schools used in Ghana, the indication given by pupils during the FGDs and checks on pupils exercise books was that teachers generally did not renege on their responsibilities of exposing their pupils to assignments to reinforce their teaching. The pupils testified that their teachers gave them a lot of assignments during class hours and also as homework. In the junior high schools where teachers were subject teachers (and not class teachers) the pupils gave the impression that they (pupils) sometimes felt over burdened with homework as teachers independently gave various homework in the various subjects of the day.

Similar testimonies were given by pupils in Kalabancoura. They testified that their teachers gave them exercises to do frequently and this helped their studies. Here are some quotes of pupils' attestations: "*we are smart in mathematics because the teacher is always available to better explain and he encourages us to read and gives us a lot of exercises to do in order to be smarter for understanding the mathematics language*" "*These courses (Biological sciences) are explained and exercises are frequent, foreign and national languages have promising future*". "*There is always too much assignments to do at home or in the school library*"

This finding of the close link between class exercises, assignments, homework and lifelong learning skills development has some implications: Teachers who make their classes sufficiently participatory and frequently give assignments to their pupils provide opportunities for the development of lifelong learning skills more than those who continually bombard their pupils with monologue presentations in the guise of teaching. It need be emphasized that the quality of the questions and assignments are as important as the frequency of the assignments in achieving the goals of lifelong learning skills development. Teachers must make a conscious effort to sharpen their questioning skills and make their questions cover, as much as possible, all the levels of cognition on the Bloom's taxonomy as well as the affective and psycho-motor domains.

In training teachers, therefore, emphases need to be placed on the acquisition of questioning and assessment skills. These are gray areas for many teachers but are generally not adequately addressed in the training colleges. The training college supervisor during their students' practice in teaching is usually more interested in the teacher-trainee's distribution of questions in the class than in the quality and variety of challenging tasks of the questions. It may be inferred from the foregoing that teachers with large class sizes who naturally do not feel encouraged to give assignments are denying their pupils the opportunity to develop lifelong learning skills. By implication, large classes may need to be discouraged as much as possible.

3.4 Integration of ICT into Teaching and Learning Process

Research Question 6: Do teachers integrate ICT into their implementation of the Syllabuses for a greater impact/outcome?

Both the Kanda Estate junior high schools and the Jack and Jill school have computer laboratories, both of which were established in 2008. This was the year in which the Government had expressed its commitment to implement its ICT policies for the education system. The Jack and Jill school lab was better furnished and equipped with thirty functional computers while that of the Kanda Estate junior high school had only nine of ten supplied computers remaining, some of which were not functional at the time of the visit. Both schools had computer teachers who man the laboratories. Jack and Jill would have opened a second computer laboratory but for the fact that leadership in the school had changed. The proprietor had retired from active work in the school as a result of old age and has been replaced by her son. Their vision and priorities for the school differ greatly. While the original proprietor had keen interest in and vision for the school attaining great heights in computer literacy and ICT integration, that of her son lies in infrastructural development. That brought a temporary halt to the original vision of expanding the stockpile of ICT equipment and opening a second lab.

There was only one printer in the Kanda Estate School while in Jack and Jill there were three printers, two photocopiers, a scanner, a projector, three radio sets and two television sets. They also had internet connectivity. The Kanda Estate School's equipment was supplied by the Ministry of Education. One of the ten computers supplied was stolen from the school hence the nine available. The Jack and Jill head-teacher has a grandiose vision of all their pupils being sufficiently computer literate and internet-search efficient such that almost all assignments in the school would be performed using ICT. His vision statement did not however mention teachers at all in reference to their ability to use ICT as a tool to teach. On the other hand, the head-teacher in Kanda Estate School had the vision of all teachers and pupils being able to use the computer in the assessment process by 2020.

The private school (Jack and Jill) seemed to have no problem with the servicing of the ICT equipment as parents were levied to cover the cost. Generally, pupils in the private school came from more affluent homes where, as result of the enlightenment of the parents, they were more willing and more able to invest in their children's education by contributing more the infrastructural development of the school. The public school did not have the benefit of this advantage. Investigations at the CRDD however revealed that the public schools were also being encouraged to mobilise their own resources to acquire some of the required ICT equipment. Parents and the public were gradually being made aware that the intended policy of one laptop per child in every school had been dropped because it was not sustainable. This calls for greater community participation in the provision of the equipment and other facilities for ICT vision.

All three head-teachers interviewed were aware that the Ghana Education Sector has an ICT policy but they all missed what the policy really is. The official policy in Ghana is to encourage all basic schools to teach computer literacy in the schools so that every pupil exiting the junior high school

would have some level of functional computer literacy. The Education sector ICT policy was derived from the National ICT policy of 2003 which was formulated to chart a roadmap for the emerging information society and knowledge based economy. It is a multi-sectoral approach bringing on board sectors such as Agriculture, Industry, Health, Physical Infrastructure as well as Local and Foreign Direct Investment.

Education sector ICT promotion was among the priority policy areas of Government. To this end, the plan was to *“transform the educational system to provide the requisite educational and training services, an environment capable of producing the right types of skills and human resources required for developing and driving Ghana’s information and knowledge based economy and society”*. The main ICT agenda for the Education Sector in Ghana therefore is to direct efforts at *‘using ICT to facilitate teaching and learning within the education system and to promote e-learning and e-education, as well as facilitate the development of the culture of life-long learning within the population at large’* Unfortunately, up till now, dependence on ICT as a tool for teaching, though desired and encouraged by the curriculum designers, has not yet been made into a policy. It remains a desired option.

In 2008, the Government at the time announced a seemingly ambitious vision of supplying laptops to all pupils in every school in the country. This vision was popularly referred to as *“one laptop per every child in every school”*. If attained, this could have pushed forward the integration of ICT into the school curriculum a great deal. Unfortunately the vision was very short lived and it was what the head-teachers and teachers understood to be the policy. This vision was short-lived because the Government at the time was out of power before the programme could be rolled out. The new government could not mobilise the necessary resources for the project and left the implementation as best in the hands of some NGO development partners. These NGOs were rolling out various programmes that sought to encourage teachers to acquire their own personal laptops through hire purchase.

Ironically, throughout the three day period of class observation at Jack and Jill, it was only the ICT teacher who made any use of a computer during his lesson. Even here, the computer was not used as a tool for teaching any other topic but rather as the focus of the lesson - the lesson was based on literacy in computer. No other ICT equipment or material was used by any other teacher. On the contrary, at least one teacher at Kanda Estate used a computer to demonstrate a topic he taught. The teacher used the computer and multi-media software (Microsoft Encarta) to demonstrate blood circulation. Though no projector was available and used for a good view by all pupils sitting at their places, it was about the best taught lesson among the lessons observed in the school. This was in spite of the fact that the sitting arrangement of the class had to be disorganised. The lesson was very participatory and pupils appeared to be keenly interested in the lesson.

It appeared, however, that that computer use in this instance was just stage managed. No lesson plan of this teacher in previous lessons had any provision for any use of ICT. Even if stage managed, it has shown clearly that the application of ICT in teaching other subjects is very possible and a viable option for that matter. One thing was clear from this study: most teachers mistook the introduction of computer literacy programmes in schools for the integration of ICT into the curriculum. Yet, there is a clear difference. ICT integration is much broader and more involving than computer literacy. To some extent, some aspects of ICT integration strive on computer literacy.

The head-teachers of Kanda Estate confirmed that their teachers hardly employ any form of ICT in their lessons. When it was suggested to them that ICT could be in different forms (and not only computers) including the use of cell phones and cameras they conceded that it was possible the teachers might have used some. The teachers later confirmed the use of cameras, radios and cell phones at one time or the other. Their aim for using them was to enhance pupils’ understanding.

In any case, it should be admitted that teachers could employ the use of ICT in their lessons, especially the computer related ones, only if they themselves were computer literate and if they have a knowhow on the use of ICT for instruction. This was what led the researchers on to find out the teachers' ICT literacy status, especially with regard to having undergone any training to gain proficiency.

The Kanda Estate School had an advantage here. Three of the seven teachers participating in the research had benefited from a training programme organised by the ICT Unit of the Ministry of Education while no teacher at Jack and Jill benefitted from any training programme. Those teachers at Kanda benefitted from the training at the time the 'one laptop per one child' plan was muted. Kanda Estate schools were selected at the experimental stage and did have their turn for training before the intervention was scrapped. The other three teachers at Kanda Estate who did not benefit from any training were not in the school at the time of the training. They insisted that they were not introduced to ICT integration while they were in the teacher training college.

The claim of these teachers not benefitting from training on ICT usage in training college appears surprising because these were young teachers who obviously were still in college at the time the 'one laptop per child in all schools' concept had become very popularised. That would seem to suggest that while Government was trumpeting and mobilising resources to introduce a major intervention of that magnitude, teacher training colleges had not been brought on board to prepare the teachers who would use the computers for the benefit of the school system. It also suggests that the Ministry actually did nothing to prepare the ground for the take-off of the intervention. This was however far from the truth because some earlier studies (2006) had established that there was an 'Imfundo' programme at the time. This was a support programme by DFID to help in training pre-service teachers in using ICT for Education. Also, there was the World Links Development Programme, which connected Secondary School Teachers and Students in 15 Countries, including Ghana, to the Internet with the aim of integrating ICT into teaching and learning in the Classroom.

On the other hand, no teacher at Jack and Jill benefitted from any training programme hence no attempt was made by any teacher to use it. The ICT infrastructural development in the school was not accompanied by any human resource development plan.

Head-teachers and teachers in both schools in Ghana admitted in subsequent discussions that ICT integration could be of immense benefit in the education delivery process. The head-teachers observed that on the few occasions that they knew some of their teachers tried to employ some form of ICT equipment in their lessons, they found that the productivity and syllabus coverage of their work improved. They contended also that those of their teachers who made the internet a constant source for information gathering when preparing their lessons had broken their complete dependence on the school textbooks and tended to be more confident in the presence of their pupils. One head-teacher was even more general and generous to his teachers' use of ICT: "Teachers have developed new ways of teaching by bringing in audiovisuals and this makes pupils understand them better".

A greater percentage of pupils who participated in the FGD at Jack and Jill had appreciable level of computer literacy and internet usage skills than at Kanda Estate. This is not surprising as most of the pupils from Jack and Jill came from more affluent homes. As mentioned earlier, most of the pupils at Kanda Estate came from homes in Nima. Moreover, pupils at Jack and Jill had greater access to computers in the computer lab than their counterparts at Kanda Estate. Some teachers, particularly at Jack and Jill, confirmed that some of their pupils were at times able to bring up some kinds of quality information in response to assignments which surprised the teachers and which source was traced to pupils' access to the internet. Some of these pupils did not only search for and find relevant information on the net for their own usage only, but sometimes post such information on the schools' notice board for others to read. One teacher cited an instance when a pupil posted educative

information on ‘moringa’, a multi-purpose herb, on the school notice board for his school mates to read.

The pupils themselves gave very good accounts of their computer and internet usage and opined that it has motivated their independent learning and fostered their better use of time. Clearly, ICT application seems to have a big role in pupils’ independent learning skills development. Instead of spending endless time on idleness, most of the free time of those who has formed the habit of being on the internet is spent at internet cafes. Asked what they used the internet for, some of them used it to search for information on assignments while also using it for some social networking such as on the Face book. It should be stressed, however, that with this spate of internet fraud, pupils’ time at the internet cafes need to be properly monitored.

As observed earlier, the situation is quite different in Mali, ICT integration is not yet a policy in that country and private participation in the form of setting up private computer labs to offer a chance to pupils has also not picked up yet. The computer room in the school under study boasts of only some few computers. Unfortunately, according to the school coordinator, teachers and pupils in the school do not have access to the computer room. Access would be given after the City Council must have met its side of the responsibility. She explained the situation in these words: *“it is very sad that this room still remains closed to teachers and pupils despite the fact that the place is dedicated to them for teaching and learning purpose; whenever, I try to let teachers or pupils access the computers, I have been told to wait until the City Council of “Commune V” does its parts of the work”*. She lamented that the gap between her school and the twin school in France is getting wider and wider because of the non-usage of ICT in enhancing pedagogy. This was a significant statement. The school coordinator was fully aware that ICT usage can enhance pedagogy.

When asked about this seemingly helpless situation the ‘Director of Pedagogical Animation Center’ had this to say: *“Investment in terms of educational equipment at the basic education level (“enseignement fundamental”) is the City Council’s responsibility. It is true, the Japanese and the Canadians have built and equipped the computer room. However, the internet connection and the acquisition of educational software are the responsibility of the City Council of Commune V (local government)”*. *Meanwhile, through our combined efforts, we have installed Microsoft Word on 3 computers. Of the 85 teachers (41 women and 44 men) at the Kalabancoura cluster of schools, only 5 are fairly trained in Microsoft Word. So you see, that means we also need a training plan for teachers on computer literacy and internet usage”*.

In spite of this formal deprivation, some pupils claim some level of literacy in computer usage and internet exploration. Some pupils had remarked: *“Even though the use of computers or access to internet are not yet ready in our school, we manage to get it, this is what every pupil and teacher does.”* Indeed about 80% of the pupils who participated in the FGDs claimed being frequent visitors to cybercafé in the city. Also about 35 pupils of which ten were girls claimed to have computers in their home with internet connectivity. There was a constraint though – they had access to the device only on Saturdays and Sundays with their parents’ permission. They admitted however that they spent a lot more time listening to music or watching movies on the internet than doing any serious studies. This situation has grown worse with recent developments in social networking programmes such as the Facebook.

3.5 Challenges Tending to hinder Lifelong Learning Skills Development in Schools

Research Question 7 (a): What are the Major Challenges Inhibiting Lifelong Learning Skills Development in Schools?

In the view of the teachers, the greatest challenge to teaching for the development of lifelong learning skills is the external examination preparation targets they have to meet with their pupils and other key stakeholders. Teachers contended that conscious teaching for the development of lifelong learning skills is time consuming and distracts attention and focus from what they consider as the primary responsibility of preparing pupils for their examinations. At least six of the twelve teachers in both schools contended that the syllabuses they are made to handle are overloaded in relationship to the contact hours available for teaching. Some of them argued strongly that either the curriculum designers failed to trial-test the teaching of the topics in the syllabuses to project accurately how much time is required to cover the entire syllabus or they did not have any clear idea of the extent to which some interruptive activities in the schools consume time at the expense of serious class interactions. They cited time spent on sports activities, clean up exercises, preparations towards national day celebrations, teachers leaving their schools for in-service training programmes, occasional teachers strikes and meetings, occasional departure from the school to chase salaries and other entitlements, periods of rain in schools where the roofs leak seriously and other exigencies that may deny the holding of classes as some of those interruptive activities. These complaints may demand that the syllabuses revised with a view to reducing the content or extending the school contact hours to allow for more content coverage.

The teachers also identified large class sizes as a deterrent to frequent assignment through which pupils constantly have to apply lifelong learning skills and thereby not only acquire proficiency in them but also develop them more or less into habits. They contended that large classes do not permit attention to individual pupils for the purpose of monitoring the development of targeted lifelong learning skills. Unfortunately, large class sizes have become the order of the day, especially for the identified relatively good schools, regardless of whatever fees the schools charge.

Some teachers also identified parental irresponsibility as a factor for deficiencies in the development of lifelong learning skills. They contended that parents seemed not to have any time for their children to enable them play their roles in the children's development. For example, they believed that parents were not adequately playing the role of resource persons to their wards in their dealing with assignments. They also claimed that some parents were too strict on their wards at home and did not allow them out of the house to execute their assignments where it meant going out to search for information. The Kanda Estate School teachers contended also that parents did not make a habit of visiting the school to find out their wards' needs nor occasionally buy books for the children to read to form a reading and studies habit. This is where the use of ICT for independent learning becomes handy and useful in filling the gap of the absence of parental guidance.

3.6 Challenges Tending to Hinder ICT Integration Policy Implementation

Research Question 7 (b): What are the major challenges facing the integrating ICT into the school curricula?

The education sector in Ghana has an ICT policy. This is a great prospect. However, for ICT to be effectively integrated into the teaching and learning process in schools, there are some basic conditions that would have to be met and which were hardly satisfied in the schools studied. They include the supply of equipment in adequate quantities and the human capital to put the equipment to good use to enhance the teaching and learning process. Equipment like computers, printers, projectors, photocopiers, television sets, radios and services like internet connectivity and periodic servicing of the available equipment are basic necessities for a programme of this nature. One head-teacher had emphasized that it was no favour done to a school if ICT equipment like computers are supplied and no provision made for their maintenance. According to this school head, it is more difficult maintaining such equipment than acquiring them. Unfortunately, with the collapse of the Governmental vision of supplying a laptop to each pupil, the door seemed to have closed on any

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prospect of furnishing the schools with the ICT integration requirements. This makes the prospect of any effective ICT integration a daunting one if not an impossible task.

The other related challenge is the apparent lack of any serious know-how on ICT integration among teachers and head-teachers. Both teachers and head-teachers admitted having only very limited knowledge and skills on how to take full advantage of technological developments to bring their lessons home to their pupils. The teachers complained of the absence of opportunities for regular in-service training programmes with a direct focus on ICT literacy and its usage for the teaching and learning process. While admitting that it should have been one of the roles of school heads to upgrade their teachers on these skills, the head-teachers excused themselves on the ground that even they themselves were in most cases not computer literate and in particular, have no idea of how to use various aspects of ICT to enhance teaching.

The possibility of inviting private participators to establish computer labs in basic schools was acknowledged by teachers and school heads alike but they pointed out that such a venture has its own challenges. Firstly, the Ghana Education Service has regulations that strictly regulate the levying of pupils for any purpose, even if parents and guardians are ready to pay. The level of fees permissible by the Ghana Education Service regulations for running a computer lab does not make investment in the area attractive to any entrepreneurs. The rates allowed often gave the impression that investors in the area were expected to establish the labs as social service to the schools and the community. Secondly, even where approval was sought and got from the Ghana Education Service for levies to run computer labs, most parents default in the payment of the levies. In such cases, the computer labs had to be closed down to prevent further indebtedness.

6. Chapter Four

4.0 Summary of Findings, Recommendations and Conclusion

4.1 Summary of Findings

The basic school curricula in Ghana and in Mali took cognisance of the fact that learning is a continuous and never ending process. The child, even as he grows into a man or a woman, would always find new things to learn. They also took cognisance of the other fact that learning is effective only if one knows how to learn or has the skills to learn. Schooling at the basic education level is therefore not an exercise to just go through any definite curriculum content but more importantly, to acquire the skills to continue learning throughout life. Adequate provision has therefore been made in the basic education curricula in both countries for the acquisition (directly and indirectly) of lifelong learning skills.

Teachers and their school heads were aware of this expectation and requirement and have adopted varying approaches to promote the acquisition of lifelong learning skills. The pupils themselves also appeared to have developed the sense of seeing their schooling beyond studying to pass their examinations. Both teachers and the pupils were aware that there were skills pupils would have to acquire not necessarily because they were relevant for them in the present but rather for their future survival. It would appear however that teachers' perception of the scope and importance of these skills was rather narrow and limited and would need to be broadened. When this is done effectively, pupils would have made habits of many lifelong learning skills which could give them a very good preparation and grounding to a viable and fulfilling future life.

The study has confirmed that teachers and their heads in the selected schools in Ghana were aware of the existence of an ICT policy for the education sector, including basic education. They were also aware of the advantages that could go with an effective integration of ICT into the teaching and learning process. However, the facilities and the human capital required for effective implementation of the policy were lacking. A strong political will is required to make the policy work to achieve its objectives.

4.2 Recommendations

In the light of the findings made in these case studies, the following recommendations are proffered for the school system in both Ghana and Mali:

7. Lifelong Learning Skills Development

1) Ghana Case

- i. The Ministry of Education and the Ghana Education Service should make conscious effort to address the challenges identified by teachers as inhibiting the development of lifelong learning skills among pupil. This will involve regulating class sizes to reasonable and manageable levels, de-emphasizing the use of external examinations as the major determinants of education quality, addressing the issue of alleged overload of the syllabuses and limiting the alleged distractions of the normal school system.
- ii. Teachers should adopt methodologies that will expose students/pupils to those skills which will in effect promote lifelong learning. They should be encouraged to move away from too much knowledge-based education to skilled- based education. The strategy of in-service training should be employed to train them on the creation of appropriate situations through questioning and assignments for the development of lifelong learning skills.
- iii. Similarly, pre-service training of teachers should place a lot more emphasis on effective assessment techniques to improve teachers' questioning skills.
- iv. It may be useful to introduce some form of motivation to encourage teachers to increase the rate of assigning pupils to do exercise and home work and ensure to mark and discuss individual performances with pupils.

2) Mali Case

Recommendation i – iv in the Ghana cases are also relevant to the Mali case.

A. ICT Integration

1) Ghana Case

- i. There is the need for a clear-cut policy on the use of ICT as a tool for teaching and learning in Ghanaian schools. Such a policy should however be supported by adequate material provisions including internet connectivity in all schools, for its implementation.
- ii. A functional and adequately equipped computer lab should be established in every basic school with adequate provision for servicing to ensure sustainability. This may be a prelude to the 'one computer per child' initiative which is on hold.
- iii. It may be useful for the MOE/GES to publish all policies of the Ministry in small booklets and distributed to schools to allow teachers to have a holistic view of policies of the ministry.
- iv. It was found out that teachers know their subject matter but lack teaching skills. There is therefore the need to organise in-service training on pedagogy for teachers
- v. Curriculum developing bodies should not be complacent with developing good programmes but make sure that teachers are applying the needed skills in teaching to achieve curriculum objectives.
- vi. Pre-service teacher training is a general programme and not necessarily tailor to meet any specific innovations in education. This should demand the frequent use of in-service training programmes to up-date and orientate serving teachers on new innovation.
- vii. Because of the spate of internet fraud, it is considered necessity to put some mechanism in place to monitor pupils' time at internet cafes.

2) Mali Case

- i. The Ministry of Education in Mali need to develop an ICT policy as early as possible to guide the education system.

- ii. Pressure should be put on the City Council of Commune V in Bamako to live up to its responsibility and empower pupils of the cluster of schools at Kalabancoura to take advantage of facility provided by the foreign development partners.
- iii. Recommendations ii, iv, and v in the Ghana cases are also relevant to the Mali case.

4.3 Conclusions

The basic school systems in Ghana and Mali have consciously provided for pupils in the formal school system to derive from the school curriculum core lifelong learning skills. Teachers who should facilitate this acquisition believe that the skills need not be taught directly but natured in pupils indirectly through constantly putting pupils in situation where they would have to exercise the skills. This can be facilitated through regular class exercises and home work. Unfortunately however, many teachers do not have the requisite skills in questioning and assessment techniques to do this effectively.

There is no policy in Mali for ICT integration into basic school curriculum. Ghana has a policy and it is adequately reflected in the curriculum. However, the required material and human inputs to make the policy work effectively was grossly inadequate and mostly inappropriate because of lack of training and proper orientation on the part of teachers. The benefits of ICT integration into the teaching and learning process is certainly too great to be ignored and not put to advantage. The Ministries of Education in these countries need to marshal the political will to prioritise the innovation and mobilise required resources to give it the necessary boost.

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