

# MINISTRY OF EDUCATION



REPUBLIC OF GHANA

# ICT IN EDUCATION POLICY

( NOVEMBER 2008)

# MINISTRY OF EDUCATION

## ICT IN EDUCATION POLICY

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## ACKNOWLEDGEMENTS

The ICT in Education Policy has been the result of an extensive consultative process, in which various sector stakeholders – public, private, civil society and development partners - were represented (*please see Appendices 1 for list of names and agencies*).

The development of this policy represents a critical step in streamlining efforts towards integrating ICTs into the educational sector. The process included the following steps:

- (1) The initial workshop of sector stakeholders convened under the consultative process for *The Ghana ICT for Accelerated Development (ICT4AD) Policy* in 2001
- (2) The development of the *Introduction of Information and Communications Technology in Education: A Policy Framework* (2002) as a part of the initiatives of the Ghana Education (GES) to streamline implementation of ICT programmes in pre-tertiary institutions
- (3) The workshop on the Integration of ICT in Education for Policy Makers (2002)
- (4) The development of the Education Strategic Plan (2003) which addressed policies, targets and strategies including the need for ICT in Education
- (5) A survey of the education platform that provided a situational analysis of the sector and presented in the Ghana e-Schools Initiative High Level Business Plan (August 2003)
- (6) The development of the actual draft policy document for the sector including a number of sector stakeholder consultations (January – December 2006)

Additionally, the Ministry intends to focus on specific strategies in implementing the policy. This will be further defined in ICT sector Implementation Plan.

## **FOREWORD BY THE MINISTER OF EDUCATION**

The Government of Ghana is committed to the transformation of the agro-based economy of Ghana into an information rich and knowledge-based economy and society using the tools of Information and Communication Technology (ICT).

The government has acknowledged the need for ICT training and education in the schools, colleges and universities and the improvement of the education system as a whole. The deployment of ICT into Education will result in the creation of new possibilities for learners and teachers to engage in new ways of information acquisition and analysis. ICT will enhance access to education and improve the quality of education delivery on equitable basis.

The Government is therefore committed to a comprehensive programme of rapid deployment and utilization of ICT within the Education Sector to transform the education system and thereby improve the lives of our people.

**It is the government's desire that through the deployment of ICT in Education, the culture and practice of traditional memory-based learning will be transformed to education that stimulates thinking and creativity necessary to meet the challenges of the 21<sup>st</sup> Century.**

Given the magnitude of the task ahead of us, the government enjoins both the public and private sector to join hands to ensure that our children receive high quality teaching and learning. I call upon all the stakeholders in the education sector to contribute to the achievement of this vision.

**HONOURABLE MINISTER FOR EDUCATION**

**ALEX TETTEY-ENYO**

**January, 2009**

## ACRONYMS

D-G	Director-General, Ghana Education Service
DDG-MS	Deputy Director-General (Management Services)
DDG- Q&A	Deputy Director-General (Quality & Access)
DFID	Department for International Development
DG	Director-General (GES)
EdSEP	Education Sector Plan
EFA	Education for All
FCUBE	Free Compulsory Universal Basic Education
GES	Ghana Education Service
GeSCI	Global e-Schools and Communities Initiative
GheSCI	Ghana e-Schools and Communities Initiative
GLOBE	Global Learning and Observations to Benefit the Environment Programme
GPRS	Ghana Poverty Reduction Strategy
ICT	Information and Communication Technology
ICT4AD	Information and Communication Technology for Accelerated Development
ICTE	Information and Communication Technology in Education
MOE	Ministry of Education,
NCTE	National Council for Tertiary Education
NFED	Non-Formal Education Division
NGOs	Non-Governmental Organisations
PTA	Parent Teachers Association
R&D	Research and Development
SMMEs	Small, Medium and Micro Enterprises
STC-ICTE	Special Technical Committee on ICT in Education
STME	Science, Technology and Mathematics Education
TVED	Technical Vocational Education and Training Division
UNDP	United Nations Development Programme
USAID	United States Agency for International Development

## EXECUTIVE SUMMARY

This policy document seeks to inform sector stakeholders as to why Information and Communication Technologies (ICTs) are an important part of our modern society and the role it plays in the education sector. The policy also seeks to underpin the vision and mission of the Ministry of Education with a view of identifying how the sector will use ICTs to develop the requisite human resources for the country which will meet the demand of the labour market, locally as well as internationally.

A review of the present challenges within the sector have been undertaken to ensure the definition of appropriate strategies for this policy. Existing policy and strategy documents for the sector have also been reviewed, ensuring attention to equity, access and quality which are key priorities for the sector Ministry. In defining the strategic use of ICTs to achieve developmental objectives for the sector, a number of guiding principles have been adopted. These have been used to reflect national needs and priorities as they relate specifically to the education sector.

Several sector and national priorities have influenced the Policy, including:

- World Forum on Education Dakar (2000)
- Report of Educational Reforms in Ghana: Meeting Challenges in the 21<sup>st</sup> Century (2002)
- ICT in Education Policy Framework: which highlights key issues and expected benefits of ICTs in Education (2002)
- The Ghana ICT for Accelerated Development (ICT4AD) Policy (2003) that recognises education as a cross-cutting issue within the national framework crucial to the support of the thirteen other national pillars.
- Ghana Education Strategic Plan 2003 – 2015: Volumes I and II (2003)
- White Paper on the Report of the Education Reform Review Committee (2004)

Seven thematic areas, outlining the requisite guiding principles, objectives and strategy have been defined within this policy document. They are:

1. Education Management – Ministry/Agencies and Educational Institutions
2. Capacity Building
3. Infrastructure, E-readiness and Equitable Access
4. Incorporating ICTs into the Curriculum
5. Content Development
6. Technical Support, Maintenance and Sustainability
7. Monitoring and Evaluation

## CHAPTER ONE

### THE CASE FOR AN ICT IN EDUCATION POLICY

#### 1.1 INTRODUCTION

It is acknowledged that for Ghana to make any appreciable progress in its socio-economic development efforts, substantial resources will need to be directed at improving educational delivery. The key role that Information and Communication Technologies (ICTs) can play in widening access to education to a wider section of the population and literacy education for facilitating educational delivery and training at all levels has been recognized as a key priority area under the current Education Reforms (2007).

International experience from both developed and developing countries have shown that these technologies have an enormous potential for knowledge dissemination, knowledge acquisition, effective learning and the development of more efficient education services. This ICT in Education Policy is therefore seen as an epitomised version of the ultimate goal of transforming the educational system by the Ministry and its sector stakeholders. It is intended to be a guide by which ICTs can be exploited in an efficient and coordinated effort to support the education sector's own goals and operations, as well as within the framework of the national development initiatives, including the National ICT4AD<sup>1</sup> Policy. The Policy document therefore seeks to provide policy directions for what needs to be done, as well as the general framework in terms of how it will be implemented. Apart from this Policy document, it is expected that a detailed ICT in Education Implementation Plan will be developed based on the outlined policy directions.

A number of working definitions as they relate to ICTs have been adapted for this policy document from the UNDP:

ICTs are basically information handling tools – a varied set of goods, applications and services that are used to produce, store, process, distribute and exchange information. They include 'old' ICTs of radio, television and telephone, and the 'new' ICT of computers, satellite and wireless technology and the Internet with their attendant tools.

With appropriate content and applications, these tools are now able to work together, and combine to form a 'networked world' – a massive infrastructure of interconnected telephone services,

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<sup>1</sup> National ICT for Accelerated Development Policy, Government of Ghana (2003)

standardized computing hardware, the Internet, radio and television – which reaches into every corner of the globe”.

Information technology means all equipment, processes, procedures and systems used to provide and support information systems (both computerized and manual) within an organisation and those reaching out to customers and suppliers. The term information and communication technology, ICT, was coined to reflect the seamless convergence of digital processing and telecommunications. ICTs include hardware, processes and systems that are used for storing, managing, communicating and sharing information.

Planning for the effective use of these technologies is crucial if they are to have the positive impact expected. Investing in ICTs is a costly decision for any country, whether developed or developing. For developing countries such as Ghana, investing in ICTs presents the dilemma of spending scarce/valuable resources on ICTs or consequently suffering from widening technological gap. As noted by Swartz (2006) *ICTs can be powerful, essential tools for learning: understanding, interpreting and communicating about the real world OR they can be black holes into which we pour our money, intelligence and time, getting very little in return.*

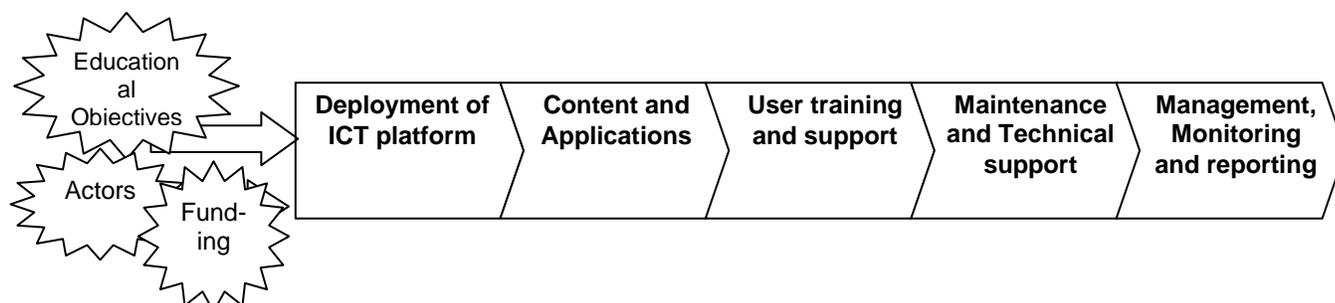
Effectively used, ICTs can amongst other things:

- Provide multiple avenues for professional development of both pre-service and in-service teachers, especially through distance education;
- Facilitate improved teaching and learning processes;
- Improve teacher knowledge, skills and attitudes and even inquiry;
- Improve educational management processes;
- Improve the consistency and quality of instruction both for formal and non-formal education;
- Increase opportunities for more student centred pedagogical approaches;
- Promote inclusive education by addressing inequalities in gender, language, disability;
- Widen the traditional sources of information and knowledge;
- Foster collaboration, creativity, higher order thinking skills;
- Provide for flexibility of delivery; and
- Reach student populations outside traditional education systems.

However, effectively integrating ICTs into educational planning and delivery can be a complicated process, leading to further disparities and challenges in the system. These may include lack of focus on educational objectives where ICTs are seen as an end itself, rather than a means (tools) to an end. Towards this end, the ICT in Education Policy will seek to implement solutions within a coordinated end to end system, looking at the combined inputs of educational objectives, multi-stakeholder

partners and funding in planning for the stages of (1) deployment of appropriate platforms (2) content and applications (3) user training and support (4) maintenance and technical support and (5) management, monitoring and reporting.

*Global E-Schools and Communities Initiative (GeSCI)*



*Total Cost of Ownership (TCO) Coordinated end- to- end System*

## 1.2 THE POLICY CONTEXT

In the last few years a number of reports, policies and initiatives (regional, national and sector) have emphasised the role of education and training in the wider development agenda of the country. Currently, the Government of Ghana is signatory to several related polices and agreements/initiatives have a bearing on ICT use within the sector. These seen at the international, regional, national and sector levels, have emphasised the role of education and training in achieving the wider development goals and agenda.

On the international front, Ghana is party to two important agreements which commit it to move rapidly towards universal basic education as an engine of social and economic growth and development. These are the **Millennium Development Goals (MDGs)** and the **Dakar Education Goals**, both with set targets to address poverty alleviation and promote international development. Two of the MDGs relate directly to educations: Goal 2 – Universal Primary Education and Goal 3 – Promote Gender Equality and Empower Women. Additionally it is recognised that education and training does have significant impact on the achievement of the other Goals.

**The World Education Forum**, held in Dakar in 2000 also identified six (6) education targets that seek to address among other issues, equity and access to education, free and compulsory basic education, increased levels of adult literacy and eliminating gender disparities. Together with the MGDs, the Dakar Education Goals constitute an internationally agreed framework against which the success of Ghana’s education policies, reforms, strategies and programmes can be measured and evaluated.

The **World Summit on the Information Society** to which Ghana subscribes also calls for building an inclusive Information Society, including the promotion of ICTs towards the achievement of internationally agreed development goals contained in the Millennium Declaration. The specific targets

for the WSIS Plan of Action to be achieved by 2015 include connecting a number of access points with ICTs including villages, community access points, all levels of education, public libraries, health centres, hospitals as well as all local and central government departments. Additionally, the need to adapt the school curricula to meet the challenges of the Information Society has also been called for.

The **New Partnership for Africa Development (NEPAD)** has also been one of the recent regional moves designed to address challenges facing African countries. The NEPAD policies and programmes related to ICTs are currently being implemented by the E-Africa Commission established in 2002. The overarching goal of the e-School plan is to ensure that the integration of ICTs into the schooling systems, leads to a sustained process of systematic transformation. The focus of this transformation is two fold: first, it will seek to change the way in which education is managed and implemented in order to overcome weaknesses inherent in current models of schooling; and second, it will seek to ensure that ICTs are harnessed to make the system more productive and efficient. Currently, Ghana is one of sixteen countries implementing the first phase of the demonstration project of the **NEPAD e-Schools Initiative** which seeks to integrate ICTs in the delivery of education curriculum at secondary and primary schools in order to improve access, quality and equity in education within the member states with an envisioned coverage of secondary schools in five years and primary school in ten years.

On the national level a number of initiatives have also highlighted the importance of ICTs in achieving education sector goals. The Government of Ghana has committed to pursuing an **ICT for Accelerated Development (ICT4AD) Policy (2003)**. This national policy outlines the plans and strategies for the development of Ghana's information society and seeks to provide a framework and plan as to how ICTs can be used to facilitate amongst other objectives the national goal of "transforming *Ghana into an information and knowledge-driven ICT literate nation*". The National Policy outlines fourteen (14) pillars, of which education is highlighted, as both a critical pillar as well as a key socio-economic enabler. <sup>2</sup> Towards this end, a number of key strategies have been identified, including: promoting the deployment and exploitation of information, knowledge and technology within the economy and society as key drivers for socio-economic development; modernizing Ghana's educational system using ICTs to improve and expand access to education, training and research resources and facilities, as well as to improve the quality of education and training and make the educational system responsive to the needs and requirements of the economy and society with specific reference to the development of information and knowledge-based economy and society; and improving the human resource development capacity and the Research and Development (R&D) capacity of Ghana to meet the demands and requirements for developing the nation's information and knowledge-based economy and society.

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2 The Ghana ICT for Accelerated Development (ICT4AD) Policy, 2003

**Ghana's Poverty Reduction Strategy (GPRSP)** The PRSP II includes five main pillars, one of which is improving the enabling policy environment to promote growth and poverty reduction. Within these and the other four pillars, specific development targets have been set for the sector and inline with the MDGs.

The latest **Education Reform** which will be implemented in September 2007, which highlights ICTs as an important cross cutting issue in the sector, and seeks to address this through several strategies including : equipping all educational institutions with computer equipment and ICT tools in a prioritised manner; implementing ICT programmes at the pre-tertiary level in a phased approach, starting with schools already possessing adequate laboratories and teachers; gradually expanding to other schools as and when ICT equipment and teachers become available; and adequately resourcing computer science and IT departments in public tertiary institutions to enable them to produce skilled human capital to meet the requirements of the industry. Within these reforms, it is also expected that the introduction of ICT into schools should cover teaching of ICT skills to all students, preparing students for the ICT professions and enhancing teaching and learning through ICTs.

### **1.3 BRIEF BACKGROUND ON ICTS IN EDUCATION IN GHANA**

The efforts to introduce ICTs into the sector by the Ministry (primarily through the GES), its development partners and other private sector agencies cover over ten (10) years. Initiatives have spanned pre-tertiary (both public and private schools) and tertiary. Efforts have largely been geared towards the deployment of ICTs to these facilities via the provision of computers and the establishment of ICT laboratories. Access however is still below the standards and numbers demanded. Though comparatively better, the concerns remain for tertiary level institutions. Additionally, there have been several private sector initiatives to set up Community based ICT centres. These however have been largely confined to urban areas with few available examples of how they have been used to support educational objectives.

In a study carried out to review and assess the ICT in Education Initiatives in Ghana (2005), twenty initiatives were selected and their impact assessed to see what lessons could be learnt. Several positive achievements were noted.

- Initiatives contributed to a wider number of students and teachers acquiring ICT skills and developing strong interests in ICT and Science;
- Schools involved in the initiatives were motivated to expand the project and/or acquire more ICT equipment; a number of private-public partners, including Parent Teachers Associations (PTAs) and civil society collaborated in the efforts;
- Lessons learnt from initiatives provided good examples for other schools to introduce their own ICT programmes;

However, the projects themselves faced a number of challenges. At least half of the initiatives had been launched as pilots with none expanded into national initiatives. Implementation challenges include:

- Poor selection of schools without the involvement of GES / MOE resulting in duplication and hence some schools having several parallel initiatives while others (especially those in the remote rural towns) had none
- Lack of policy direction at all levels (schools, districts, national) for the integration of ICT in education;
- Heavy dependency on external funds, with most initiatives stopped after depletion of initial funding
- 'Dumping' of obsolete and inappropriate equipment as ' support' for the initiatives
- Low levels of ownership at the level of the schools, due to external motivations, and low levels of understanding on the part of recipients about the potentials of ICTs in education
- Lack of trained ICT personnel (including teachers) far below the numbers demanded to support the initiatives with most capacity building efforts one-off with no continuous trainings planned for

Additionally, there was the recognition that to ensure success and sustainability, ICT in Education projects should be implemented not necessarily to increase the number of computers, but should instead be based on supporting discrete educational objectives. The lessons learned from the initiatives further highlighted the need for a coordinated, focused and properly managed approach to the adoption and utilization of ICTs. Such an approach could further improve the accessibility and delivery of quality education and better maximize the impact of ICTs in Education.

#### **1.4 VISION, MISSION AND OVERALL POLICY GOALS**

The need for a nationally accepted ICT in Education Policy for Ghana is more urgent than ever before. With the increased thrust of the Government in using ICTs as a tool for economic growth and development, almost daily new plans and new initiatives are being implemented. However, it is recognised that in the absence of a national policy and sector wide coordination, such initiatives will continue to happen haphazardly, with increased risks of duplication and wasting of scarce resources that do not adequately address the educational objectives and priorities with the sector. Recognising that ICTs must serve, rather than drive the implementation of educational strategies, this policy document seeks to provide a clear purpose and rationale for how ICTs will be effectively integrated into the sector, including identifying opportunities, issues, challenges and strategies that will be employed.

The deployment, exploitation and development of ICTs to accelerate the socio-economic development of the nation has been captured in the Ghana ICT for Accelerated Development (ICT4AD) Policy document (2003), with the main mission to “transform Ghana into an information rich knowledge based and technology driven high income economy and society”. Already within this document education is seen as a key strategic pillar.

Given this context, the overall Vision of the ICT in Education Policy will be to:

Use appropriate ICTs to support and align the sector Ministry’s policies, objectives and strategies, particularly as it relates to equitable access to education, quality of education, educational management, science and technology and labour market needs. The **Mission** of this policy will be to:

**Articulate the relevance, responsibility and effectiveness of utilizing Information and Communication Technologies (ICTs) in the education sector, with a view to addressing current sector challenges and equipping Ghanaian learners, students, teachers and communities in meeting the national and global demands of the 21st Century.**

The fundamental objective of the policy will be to ensure that the Ghanaian education sector provides adequate opportunities for Ghanaians to develop the necessary skills, regardless of the levels of education (formal and non-formal), to benefit fully from the Information Society.

Towards this end the overall policy goal will be:

**To enable graduates from Ghanaian educational institutions – formal and non-formal - to confidently and creatively use ICT tools and resources to develop requisite skills and knowledge needed to be active participants in the global knowledge economy by 2015.**

The policy goals as adapted from the National ICT4AD Policy document will therefore include:

1. Facilitating the deployment, utilisation and exploitation within the educational system to improve on educational access and delivery to support teaching and learning from the primary level upwards
2. Modernise the educational system to improve the quality of education and training at all levels of the educational system and expanding access to education, training and research resources and facilities.
3. To orient all levels of the country’s educational system to the teaching and learning of science and technology in order to accelerate the acculturation of science and technology in society and produce a critical mass of requites human resources and a well informed citizenry.
4. To achieve universal basic education and improve the level of basic and computer literacy in the country.
5. To ensure a population in which all citizens are at least functionally literate and productive.
6. To expand and increase access to secondary and tertiary education.
7. To strengthen science education at all levels and in all aspects of the educational system, especially at the basic and secondary levels.

These policy goals have been adapted and expanded to develop a number of concrete guidelines, objectives and strategies which are grouped into seven (7) thematic areas:

- Thematic Area 1: Education Management – Ministry/Agencies and Educational Institutions
- Thematic Area 2: Capacity Building
- Thematic Area 3: Infrastructure, E-readiness and Equitable Access
- Thematic Area 4: Incorporating ICTs into the Curriculum
- Thematic Area 5: Content Development
- Thematic Area 6: Technical Support, Maintenance and Sustainability
- Thematic Area 7: Monitoring and Evaluation

## CHAPTER TWO

### THE POLICY FRAMEWORK

#### 2.1 ELEMENTS UNDERPINNING THE FRAMEWORK

The ICT in Education Policy is based on the premise that there are several key elements that underpin the use of ICTs. These include: Teaching and Learning; Management and Administration; Communication; and Access to information. Furthermore, it is recognised that these elements will be dependent on policy reforms, both within education sector as well as within other related sectors including Communications, Local Government and Rural Development amongst others.

Additionally, four key elements are seen as crucial to planning for ICTs within the sector. These four (4) key elements are:

- Equity
- Access to ICT Infrastructure
- Capacity Building, and
- Norms & Standards.

**EQUITY:** The use of ICTs in education will involve have to involve strategic choices about resource allocation. It is expected that the principle of equity will inform the approaches taken and provide the basis for allocation. Informed decisions have to be taken about resource allocation(s) with care taken to avoid cases where technology further amplifies existing in-country digital divides. It is for this reason that the principle of equity will inform the selected approaches and strategies. This must also address the issues of gender and special needs education.

**ACCESS TO INFRASTRUCTURE:** The expected impact on end-users (learners, teachers, managers and administrators) will very much depend on affordable and continuous access to hardware, software and connectivity. This in turn will be dependent on the availability of appropriate physical infrastructure including classrooms and power sources (e.g. electricity or solar).

**CAPACITY BUILDING:** Lessons from ICT in education initiatives globally have proved that ICTs can only be effectively exploited when the intended users are competent to do so. This implies that the user has the requisite level of skills, knowledge and attitudes for using the technology for the tasks required. Initiatives for professional development (pre-service and in-service), standards and norms of performance for students incorporating project-based and other collaborative approaches that integrates the use of technology into the curricula must be addressed. Set and approved ICT standards for use that are aligned to job market requirements (demands) must be defined.

**NORMS AND STANDARDS:** Current initiatives and donations of software and hardware have sparked debates on issues of open source, copyright, licensing, refurbishment and inter-operability. Further defining nationally accepted norms and standards for use, content, connectivity, hardware, software, technical support and community engagement also need to be addressed.

These four areas are expected to be further detailed in the Implementation Plan, along with the appropriate strategies and activities.

## 2.1 PRIORITIZATION OF ICT IN EDUCATION AT THE INSTITUTIONAL LEVEL AND DEPLOYMENT LEVELS

In line with the Education Reform (2007), the Ghana education system is structured as follows:

CYCLE	LEVEL	INSTITUTIONS	STARTING AGE	YEARS
Tertiary	Tertiary	Universities, Polytechnics Professional Institutes, Colleges of Education	19+	4 yrs
Second Cycle Education	Senior High School	Grammar/Vocational/ Technical/Agricultural/ Apprenticeship Programme	15	4 yrs
First Cycle Education	Basic Education (Free Education)	Junior High School	12	3yrs
		Primary School	6	6yrs
		Kindergarten	4	2yrs

**Source: Government White on Report of review of Educational Reforms (2004)**

The entire programme of integrating ICT into Education is both crucial and needs urgent attention. In terms budgetary constraints and rate of provision of an enabling environment it is important to prioritise the provision of ICT services to the various levels of education. To this end the following priority scale arrangement has been made to show the as shown below is proposed:

## PRIORITY SCALE

1a	MOE & Agencies
1b	Colleges of Education
1c	Teacher Universities with ICT
2a	Other Universities /Polytechnics (ICT)
2b	Other Universities /Polytechnics (Gen)
2c	Second Cycle Institutions (SHS, Technical Inst. & Vocational Insts).
3	Junior High School
4	Primary Schools
5	Pre-Schools
6	Community Information Centres(outside the remit of education)

In implementing the priorities, supporting the capacity of the Ministry of Education and its Agencies is seen as an overarching priority and will be handled parallel to the priority scale as set for the institutions. Additionally, learners with special needs will be integrated within all priority areas.

The prioritisation above is based on the following considerations:

- Urgency in providing the enabling environment for efficiently integrating ICTs within the sector generally;
- Need for building the capacity of teachers who are seen as a central figure in the entire programme;
- Proximity of educational institutions to the job market and the need to provide a competent labour force;
- Need to put higher priority on those training to be teachers than others;  
Cost of providing an end to end solution and the availability of some of the needed logistics as against budget constraints;
- Early provision of facilities to courses that demand ICT facilities more than others.

Additionally regardless of the above priority scale any support arrangements falling within the proposed implementation plan deliverables will be accommodated. However the key issues of sustainability and alignment to the educational objectives will have to be planned before projects a strategies are implemented. This is very crucial to direct funding.

## CHAPTER THREE:

### POLICY STATEMENT AND STRATEGIC COMPONENTS

#### **The ICT4AD Education Sector Policy Statement**

The Education Sector Policy Statement has been previously defined in the National ICT4AD Policy. As a part of the mission to “transform *the educational system to provide the requisite educational, and training services and environment capable of producing the right types of skills and human resources required for developing and riving Ghana’s information and knowledge based economy and society*” the Government is committed to a comprehensive programme of rapid deployment, utilization and exploitation of ICTs within the educational system from primary school upwards.

Policy efforts will be directed at using ICTs to facilitate education and learning within the educational system and promote e-learning and e-education as well as life long learning within the population at large. As a part of this policy commitment, the Government shall put in place measures to strengthen science education at all levels as promote technical and vocational training with an emphasis on the use of ICTs to facilitate the training and learning process.

#### **Overall Policy Goal**

The overall goal of the ICT in Education Policy is to:

**To enable graduates from Ghanaian educational institutions – formal and non-formal to confidently and creatively use ICT tools and resources to develop requisite skills and knowledge needed to be active participants in the global knowledge economy by 2015.**

Seven (7) thematic areas outlining guiding principles, objectives and associated strategies have been identified to achieve the goal of the ICT in Education Policy. These thematic areas have been defined as:

- i. Education Management – Ministry / Agencies and Educational Institutions
- ii. Capacity Building
- iii. Infrastructure, E-readiness and Equitable Access
- iv. Incorporating ICT into the curriculum
- v. Content Development
- vi. Technical Support, Maintenance and Sustainability
- vii. Monitoring and Evaluation



	ESP Focal Areas	Strategies
1.3 Develop appropriate education management support structures and policies for ICT deployment	EM1	1.3.1 Develop acceptable use policy (ies) based on security, privacy, intellectual property laws, cultural and moral values in education management.  1.3.2 Create awareness and enforce the acceptable use policy.

**THEMATIC AREA 2  
CAPACITY BUILDING**

**Guiding Principles**

- **ICTs can be used to transform the teaching and learning systems to meet the challenges of the knowledge economy.**
- **The introduction of ICT in the Education Sector necessitates the training of all persons involved in the educational service delivery (management / staff, teachers including teacher trainees, technicians, etc.).**
- **An aggressive well planned program is needed to solve the acute shortage of highly qualified ICT & Computer Science teachers in the country's educational institutions.**
- **A corps of highly trained personnel is required to ensure the sustainability and growth of ICT implementation.**
- **Continued professional development is a key element towards supporting teachers who are confident and creative users of ICTs.**
- **Training and ICT skills development of teachers can be used to enhance the teaching and learning of subjects in the curriculum.**
- **Skills for basic troubleshooting and preventive maintenance of computer equipment must be part of the training of teachers.**
- **The use of Distance Education and virtual learning systems can reduce the number of teachers leaving the classroom for study leave and also reduce cost.**

<b>Objective</b>	<b>ESP Focal Areas</b>	<b>Strategies</b>
2.1 Development of ICT Human Resources & Enhancement of Practical Training in Tertiary Institutions	QE3 EM4 ST3, ST4 EA10 EA11 ST5	2.1.1 Aggressively implement a scheme to provide scholarships / study leave for postgraduate studies in ICT (both) local and foreign to arrest the critical shortage of ICT Faculty in tertiary institution.  2.1.2 Implement a programme to promote research in ICT at the country's tertiary institutions.  2.1.3 Institutionalise programmes in postgraduate degrees in ICT programme at all public universities.  2.1.4 Support private tertiary institutions which have the capacity to offer postgraduate programmes at the tertiary level.  2.1.5 Facilitate visiting Professor / Faculty Exchange Schemes between Ghana tertiary institutions and foreign universities with world class ICT faculties.  2.1.6 Establish special incentives scheme which will attract and retain ICT teachers.

<p>2.2 Provide appropriate ICT Training to all Teachers to enhance the use of ICT.</p>	<p>EA3 EA11 QE3 QE5 QE16 ST4</p>	<p>2.1.7 Put in place special Distance Learning postgraduate programmes for ICT faculty.</p> <p>2.1.8 Upgrade ICT facilities (laboratories, equipment, software, digital libraries, communication access etc) to acceptable international standards.</p> <p>2.1.9 Provide avenues for industrial attachment as part of the training at the tertiary level.</p> <p>2.2.1 Develop a national coordinated strategy for on-going professional development for in-service and pre-service teachers with a special focus on pedagogy.</p> <p>2.2.2 Promote the use of electronic and distance education and virtual learning systems to complement and supplement face-to-face campus based education and training systems.</p> <p>2.2.3 Identify select teacher training colleges to provide ICT in education training (applications plus technology integration skills).</p> <p>2.2.4 Equip and re-tool teacher training colleges and institutions to prepare teachers in the integration of ICT in the curriculum.</p> <p>2.2.5 Promote basic training in ICTs skills for teachers in all schools and tertiary institutions.</p> <p>2.2.6 Train ICT co-ordinators and laboratory technicians / assistants in all educational institutions.</p> <p>2.2.7 Develop and regularly evaluate standards for ICT tools and infrastructure.</p> <p>2.2.8 Organise regular in-service training for educational sector personnel on the effective use and management of ICT.</p> <p>2.2.9 Use ICT to improve capacity building.</p> <p>2.2.10 Improve the quality of the education delivery system through the deployment &amp; exploitation of relevant ICT based tools, systems and procedures.</p> <p>2.2.11 Equip VOTECH Resource Centres to serve as refurbishment centres for computers used in educational institutions.</p>
<p>2.3 Use Distance learning to offer further training to teachers in basic school</p>	<p>EA7</p>	<p>2.3.1 Set up appropriate infrastructure at selected centres to facilitate distance learning for all teachers pursuing further courses.</p> <p>2.3.2 Set up appropriate infrastructure at public universities focusing on the training of teachers for 1<sup>st</sup> cycle schools.</p> <p>2.3.3 Set up digital e-Libraries to support Distance Education.</p>

**THEMATIC AREA 3**  
**INFRASTRUCTURE, E-READINESS AND EQUITABLE ACCESS**

**Guiding Principles**

- **The availability of appropriate infrastructure is key to facilitating the deployment of ICT at each level.**
- **ICT equipment should be deployed according to internationally acceptable standards.**
- **Students' user access to up-to-date computer-based tools can facilitate their making significant contributions to the knowledge economy.**
- **Equity of access must be an overriding consideration in any ICT programme being implemented.**

<b>Objective</b>	<b>ESP Focal Areas</b>	<b>Strategies</b>
<p>3.1 Facilitate the establishment maintenance and support of the ICT infrastructure and resources within the education sector.</p>	<p>ST4, ST5 EA 6,8 QE1, QE16, EM4</p>	<p>3.1.1 Undertake a comprehensive assessment and analysis of the current ICT situation (e-readiness) of all Educational Institutions to include: assessment of ICT infrastructure requirements (present and future), ICT deployment and usage and staff competencies.</p> <p>3.1.2 Undertake a comprehensive assessment of the level of ICT deployment and usage as well as future infrastructure requirements within MOE and all its agencies.</p> <p>3.1.3 Develop a multiphase plan for the deployment of ICT infrastructure and tools to retrofit Educational institutions, MOE and its agencies.</p> <p>3.1.4 Implement the plan for the upgrading and deployment of relevant ICT infrastructure and supporting logistics into Educational Institutions and MOE and all its agencies.</p> <p>3.1.5 Develop, regularly update, monitor and enforce compliance to minimum specifications for the acquisition and utilization of ICT infrastructure and related resources.</p> <p>3.1.6 Equip and retool Teacher Training Institutions to prepare teachers in the integration of ICT in the curriculum.</p> <p>3.1.7 Facilitate local access to national and international research findings through e-library, etc.</p> <p>3.1.8 Explore cost effective alternatives for educational institutions without regular electricity supply.</p> <p>3.1.9 Ensure that ICT resources in all educational are adequately secured.</p> <p>3.2.0 Develop infrastructure to support Distance Education and e-Learning.</p>

<p>3.2 Facilitate equitable access to ICTs for all students and communities</p>	<p>ST1 EM4 QE1 EA7 QE EA6 EA12 EA9</p>	<p>3.2.1 Establish targets and standards for student and community access to ICT and level of ICT Usage.</p> <p>3.2.2 Develop new regulatory framework to address access constraints.</p> <p>3.2.3 Enhance existing / establish new ICT centres in all Educational Institutions.</p> <p>3.2.4 Facilitate and improve appropriate internet connectivity and access to ICT services, including the internet in all Educational Institutions and agencies within the Ministry.</p> <p>3.2.5 Set up new ICT laboratories with adequate hardware, software and tools in all educational institutions.</p> <p>3.2.6 Introduce computers into all educational institutions (pre-school to tertiary) as resource for management, teaching and learning.</p> <p>3.2.7 Establish an Education Portal / Intranet and website using secure and latest technologies for the dissemination of information.</p> <p>3.2.8 Put in place special schemes to enable students, teachers and educational institutions to purchase computers through attractive financial packages.</p> <p>3.2.9 Set up community ICT centres to facilitate or promote ICT in life long learning.</p> <p>3.2.10 Collaborate with the appropriate sector ministry to ensure the availability of national communication backbone to all rural areas.</p> <p>3.2.11 Put in place appropriate technology options to extend access to school schools situated outside or beyond the national communication grid.</p> <p>3.2.12 Ensure inclusiveness (gender, special needs) in ICT education planning and deployment.</p>
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**THEMATIC AREA 4  
INCORPORATING ICT INTO THE CURRICULUM**

**Guiding Principles**

- Curriculum reform is necessary for ICT to be introduced and utilised effectively in the classroom.
- Exploitation of ICT in teaching improves students learning and thus develops skills necessary for the competition in the knowledge economy and information society.
- The integration of ICT in the education system can boost the economy of the country because it can enhance productivity.
- Curriculum content must address the ICT needs of the labour force
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Objective	ESP Focal Areas	Strategies
4.1 Integrate ICTs into the curriculum	QE5 QE16 ST4	4.1.1 Examine critically the existing curriculum with the view to including ICTs as an additional teaching and learning tool.  4.1.2 Develop pedagogies that utilise ICTs to meet the needs, interests and learning styles of individual students including the gifted and those with special needs.  4.1.3 Establish and document guidelines on how ICT skills can be incorporated at various levels and in various subject areas.  4.1.4 Prepare teacher orientation package on integration of ICTs in the teaching / learning process to include ideas for all subject areas.  4.1.5 Provide access for students and teachers to international knowledge networks and shared educational resources.  4.1.6 Establish a network for sharing of experiences and best practices to encourage the sharing of experience (lessons learnt) in relevant meetings and fora at regional and district levels.  4.1.7 Develop guidelines (standards and benchmarks) for integration of ICT in the teaching and learning of ICT  4.1.8 Integrate ICT into the teaching and learning process from kindergarten to tertiary level  4.1.9 Carry out an initial survey on the status and utilization of ICT in all educational institutions.  4.1.10 Set up a research unit for the compilation and evaluation of digital content at for the teaching and learning at all levels of education
4.2 Introduce ICT as a subject at all levels of education	QE10	4.2.1 Introduce ICT as a core / elective subject at the institutions  4.2.2 Establish national minimum basic ICT skills sets at all levels to ensure that all students are computer literate in appropriate basic ICT skills

<p>4.3 Develop and integrate modern assessment methodology for teaching and learning</p>	<p>QE6 QE7 QE11</p>	<p>4.2.3 Develop an appropriate measurement and evaluation mechanism for all ICT skills set programmes at all levels.</p> <p>4.2.4 Develop a teaching syllabus for ICT courses at all levels.</p> <p>. 4.2.5 Set up a research unit for the compilation and evaluation of digital content for teaching and learning at all levels of education</p> <p>4.3.1 Promote authentic assessment (rubrics, project based, portfolios and case study) for students</p> <p>4.3.2. Establish appropriate teacher performance appraisal system.</p>
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## THEMATIC AREA 5

### CONTENT DEVELOPMENT

#### Guiding Principles

- **Digital content is critical to e-Education because it can be easily and randomly accessed, adapted and manipulated, and is accessible from many locations**
- **Digital content is easier and less expensive to update and distribute**
- **Development of digital content will promote the use of indigenous culture in the education system**
- **Multimedia digital content can facilitate effective learning**

Objective	ESP Focal Areas	Strategies
5.1 Develop Appropriate Content for Open, Distance and e-Learning	QE16 EA7 EAll QE5 QE1 ST4 ST5	<p>5.1.1 Develop and digitized content to supplement education delivery Institute and organise cost effective distance education programmes to cover all levels of education in the formal and informal sectors.</p> <p>5.1.2 Promote the development and utilization of a national educational portal / website which will provide links to help teachers, students and the public access educational information readily.</p> <p>5.1.3 Modify and convert traditional materials into electronic format for e-learning.</p> <p>5.1.4 Promote the development and use of e-libraries.</p> <p>5.1.5 Develop and distribute knowledge resources (e.g. DVD / CD ROMs) to schools to supplement educational delivery.</p>

## THEMATIC AREA 6

### TECHNICAL SUPPORT, MAINTENANCE & SUSTAINABILITY OF ICT INITIATIVES

#### Guiding Principles

- Management support and commitment are required to guarantee successful implementation and sustainability of the ICT in Education Programme.
- The provision of technical support and regular maintenance is essential to successful implementation of ICT initiatives.
- The introduction of ICT based educational programmes will require adequate funding for the resources necessary to accomplish the goals of these programmes.
- ICT equipment has a finite life span due to wear and technological obsolescence and need replacement and maintenance plans.
- As a result of the rapidly evolving nature of the technology, flexible, open and upgradeable architectures are preferable.
- Effective monitoring of ICT inventory and maintenance will assist towards sustainability.
- Functional, reliable and properly maintained ICT equipment is a significant factor in the sustainability and continuity of ICT programmes.

Objective	ESP Focal Areas	Strategies
6.1 Ensure effective support and maintenance of ICT infrastructure	EM5 EM4 EA6	6.1.1 Recruit, train and retain ICT Coordinators and lab technicians in all educational institutions to provide technical support and maintenance.  6.1.2 Set up Regional and district Technical Support and Maintenance centres.  6.1.3 Put in place the proper mechanism for the maintenance and management of ICT equipment in all educational and training institutions.  6.1.4 Undertake regular system audits.  6.1.5 Promote the development of Technical Support Services as important auxiliary services for maintenance and support of ICT infrastructure and supporting logistics in every educational institution.  6.1.6 Set up an account for all funds received for ICT programmes.

<p>6.2 Ensure and guarantee sustainability of ICT initiatives</p>	<p>EM9 EM6 EM8 EA6 EM5</p>	<p>6.2.1 Promote partnership to continuously support and sustain ICT initiatives</p> <p>6.2.2 Put in place mechanisms for stakeholders commitments (MOU, Service level Agreement, contract, etc)</p> <p>6.2.3 Provide a secure, adequate and regular budget line to ensure sustainability of ICT initiative</p> <p>6.2.4 Involve stakeholders participation in the ownership of ICT initiatives including PPPs</p> <p>6.2.5 Encourage appropriate cost sharing strategies to support ICT deployment</p>
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## THEMATIC AREA 7

### MONITORING AND EVALUATION

#### Guiding Principles

- It is necessary to perform ongoing assessment and evaluation of the extent and impact of the implementation of the strategies in the ICT plan.
- Regular review and revision of ICT policy and practice keeps the process more current and in line with both management and technological trends.
- Continuous Research in ICT related issues is necessary, given the volatile and ever-changing nature of modern technology.

Objective	ESP Focal Areas	Strategies
7.1 Institute programmes and procedures to monitor and evaluate the implementation of the various components of the ICT in Education Policy	EM1 EM2 EM3 EM4 EM5 EM6 EM7 EM9 QE7 QE10 QE11 QE16 ST4 ST5	7.1.1 Monitor the use and management of ICT tools, systems and procedures and make recommendations for improvement.  7.1.2 Evaluate the use and management of ICT tools, systems and procedures and make recommendations for improvement.  7.1.3 Institute a motivational award scheme for efficient utilization, management and development of innovational ICT infrastructure and content.  7.1.4 Keep abreast with regional and international development in ICTs.  7.1.5 Regularly research into the most commonly used and effective ICT tools currently on the local market and make recommendations available to users.  7.1.6 Develop a standard guide to guide and harmonize existing and future ICT in education programmes at all levels.  7.1.7 Conduct impact assessment on ICT teaching and learning  7.1.8 Expand EMIS in the collection and evaluation of data on ICT resources  7.1.9 Expand M & E indicators to include issues related to ICTs

## CHAPTER FOUR

### MANAGING THE IMPLEMENTATION OF THE ICT IN EDUCATION STRATEGY

#### 4.1 CRITICAL SUCCESS FACTORS

As with all policies, the ICT in Education policy needs to be managed in accordance with a framework that supports effective implementation of the policy. A number of critical success factors have been identified. These include:

- **Leadership, political and governmental commitment and support at the highest levels.**

Commitment and responsibility of the MOE to collaborate with other key Ministries, Departments and Agencies as well as the District Assemblies and the Parliamentary sub-committees on education and communication at all stages of the process from the definition of the vision to the implementation of specific programmes and initiatives is required.

- **Funding**

Funding an effective utilisation of resources should be seen as a critical elements and the Government should be committed to providing and releasing adequate resources to ensure success and sustainability. Planning and budgeting for the deployment of ICTs will use a Total Cost of Ownership (TCO) Approach that will include elements relating to:

- Acquisition of appropriate hardware and software
- Installation and configuration
- Connectivity
- Maintenance and technical support
- Capacity building
- Upgrading/retrofitting physical facilities and
- Replacement costs.

- **Active Participation by stakeholders**

The continued active participation of key stakeholders via stakeholder consultations, representation on the Steering Committee and within working groups in the implementation process will be encouraged. Such interaction will provide reliable feedback, synergies and better collaboration in implementing the Policy.

- **Teamwork and project-based principle of operational management.**

The day-to-day operations management will be performed on the interdisciplinary teams as the ICT in Education implementation calls for the involvement of formidable expertise potential in the field of information, communication and management technologies, as well as excellent knowledge of processes in educational

administration.

- **Continuous coordination and feedback at all stages of implementation.**

The effects of ICT in Education can be seen on a long-term basis, while its implementation requires enormous human and financial resources. Benchmarks and annual targets will be set within the defined Implementation Plan, along with clearly defined targets for delivery.

- **Change Management**

Considering the magnitude and diversity of change required to make the ICT in Education implementation a success, supporting effective (and non-threatening) change management processes at all levels will be crucial. This will entail:

- Assessing the change readiness of the Ministry, educational institutions and other stakeholders with the view of selecting the best change configuration;
- A clearly defined and comprehensive change vision, with the necessary support structures and capacities to make it operational;
- Building a broader base of understanding about the potential of ICTs to transform the sector, using local and international lessons and good practices;
- Building the necessary level of stakeholder commitment through incessant communication and public education;
- Further defining leadership roles and responsibilities, and building necessary leadership skills at all levels (national, regional, district, institutional) ;
- Focusing not just on knowledge and skills but also attitudinal capacities to develop the right culture with the appropriate mindset, values, and behaviour;
- Designing appropriate organizational structures at all levels with appropriate reporting structures and integrating mechanisms, people performance management, and people practices.

- **Monitoring and evaluation**

Crucial to co-ordination is the development, implementation and monitoring of targets. This will be reflected in national and regional ICT plans. Annual reviews and three-year evaluations will be conducted to inform the implementation process. The direction and focus will benefit from insights gained and lessons learned from the reviews. Evidence of success will be captured against nationally agreed indicators and targets. The data collected will guide decisions and inform continuous improvement of the implementation of the ICT in Education policy.

## **4.2 PLANNING CYCLES**

The achievement of the ICT in Education policy goal that every learner in general and tertiary education and training institutions will be ICT capable by 2015, calls for a long-term strategic direction that will provide a framework for specific priorities and actions to be implemented over a period of time. These targets set out in the implementation strategy serve to guide the initial medium-term process of integrating ICT into e-learning and identify key national goals, initiative and strategic resource allocation. A modest, sustained and systematic growth plan is preferred. During this time, realistic targets should be set and communicated upfront by the MOE its agencies and educational institutions.

## **4.3 PHASES OF IMPLEMENTATION**

### ***PHASE I***

- **Enhance a system-wide and institutional readiness to use ICT for teaching, learning and administration**
  - Build a education and training system to support ICT integration in teaching and learning
  - Build teachers' and managers' confidence in the use of ICT
  - Build a framework for competencies for teacher development in the integration of ICT into the curriculum
  - Establish an ICT presence in schools

### ***PHASE II***

- **Ensure system wide integration of ICT into teaching and learning**
  - Curriculum Research and Development Division should introduce and curriculum guideline for ICT integration.
  - Teachers and managers integrate ICT into management and the curriculum
  - ICT facilities widely present in schools.
  - All schools with ICT facilities have a full-time teacher to manage the facility and to champion the use of ICT in the school.
- **Encourage communities to support ICT facilities in educational institutions**

### ***PHASE III***

- **ICT integrated at all levels of the education system – management, teaching, learning and administration**

- All departments of education use ICT seamlessly in planning, management, communication and monitoring and evaluation.
- All learners and teachers are ICT capable.
- ICT is integrated into teaching and learning in all schools.

#### **4.4 INSTITUTIONAL ARRANGEMENTS AND COLLABORATIONS**

The development and implementation of the ICTE policy requires an institutional arrangement and collaboration structure. Institutional relationships between government, privatized operators, the regulatory agency, educational institutions and other relevant line ministries that may serve as key stakeholders in the implementation agenda need to be established and well maintained. Such an institutional arrangement creates an avenue to provide critical and practical direction in the implementation process. For purposes of coordination, the **Ghana e-Schools and Communities Initiative (GESCI)** of the Ministry would serve as the umbrella initiative to drive all other ICT in Education Initiatives in Ghana.

##### **Role of Partners**

###### **Ministry of Education(MOE)**

The overall responsibility for this policy and its implementation belongs to the MOE. To maintain institutional arrangements and integrity, the Ministry may assign the implementation of specific strategies to any of its agencies. These agencies and all schools will have to implement and deploy systems in accordance with the stated policy and any related regulations.

###### **National and International Development Partners**

The funding of ICT in education initiatives at all levels is the prime responsibility of the Government of Ghana as the major stakeholder in education. The Government will need to provide funds for the acquisition of ICT resources, putting the necessary infrastructure in place (especially in the rural areas), maintenance of the resources, and training the required manpower and other related activities. It is unlikely that the Government can finance acquisitions solely from its resources and that other sources should be explored. This naturally calls for the collaboration with the National and International Development Partners (Private Organisations, Development Partners, NGOs, the Parent Teacher Associations (PTAs), Old students Associations) in the introduction of ICT into education. The roles of these Partners could be summarized as follows:

###### **National Development Partners**

Contributing to the funding for, and purchase of equipment, and also facilitating in the building and refurbishing of ICT Centres. They can also provide incentives for teachers who support ICT in education efforts in the schools

### **International Development Partners**

These partners could provide financial support and technical direction to the programmes and projects which are being developed. Several development partners are already supporting ICT in education initiatives and programmes. These Partners include World Links for Development Programme, GLOBE Programme, DFID, World Bank Institute, GeSCI, UNDP, USAID, SchoolNet, Computer Aid International, etc.

### **National ICT in Education Coordinating Committee**

Recognizing the crucial role of partners in implementing these changes, the Ministry will see to include a wide cross section of stakeholders in the process leading up to the development of the draft policy. The Ministry remains committed to using a similar consultative approach in developing the implementation plan for the policy as continuing to build a shared vision and soliciting active input and commitment from all stakeholders is seen as an essential part of the process.

Towards this end, the MOE has established an ICT in Education Coordinating Committee to oversee the development of an integration plan to support the ICT in Education Policy objectives and strategies. This apex national body will essentially provide guidance in the entire implementation process and will serve as an advisory body in an effort to:

- (a) Provide support and input for the development of a detailed implementation plan, addressing goals, objectives and strategies as outlined in the ICT in education policy, including the financing of the policy;
- (b) Strengthen and influence the work of the MOE in creating an enabling sector environment in which the objectives of the ICT in Education Policy can be met;
- (c) Integrate new and existing efforts of different partners at an appropriate level of decision making and implementation of programmes and projects into an accountable, transparent and participatory way to ensure a maximum degree of good governance

### **4.5 The National ICT in Education Coordinating Committee**

The Coordinating Committee will be a multi-stakeholder group, comprised of sector partners/representatives drawn from different organisations including, but not limited to:

- Public sector, including other Ministries, Departments and Agencies
- Private Sector
- Civil Society
- Development Partners
- MOE and GES Departments and Agencies
- Educational institutions (public and private)
- Parents
- Students

Additionally, the Coordination Committee will assign Thematic Working Groups for each of the policy's seven focal areas and other relevant issues related to the Implementation plan. The Thematic Focal Points will provide technical and professional advice to the Coordination Committee on specific policy and implementation activities based on their expertise.

### **Terms of Reference (TOR) for Steering Committee on ICT in Education Policy**

1. Provide overall coordination and control over the process on implementation plan development of the ICT in Education Policy, including:
  - i. Guidance on project implementation plans and activities
  - ii. Sustainability of coordinating mechanisms on the sector level
  - iii. Priorities in implementing sector strategies
  - iv. Financing plan and resource mobilisation options
2. Provide a point of coordination for activities seeking to support the use of ICT in the education sector.
3. Provide guidance and feedback on proposed revisions to implementation plans as necessary during the life of projects and activities
4. Monitor and review progress of projects and activities to ensure that they are implemented according to approved implementation plans.
5. Receive and review project reports
6. Review policies and recommend changes from time to time as needed

The Coordinating Committee will be chaired by the Chief Director of the Ministry of Education, Science and Sports, with membership including but not limited to representatives the following Ministries, Departments, Agencies and organisations.

- National Council for Tertiary Education
- Ghana Education Service (including Divisions/Directorates for Curriculum Research and Development, Secondary Education, Basic Education, Teacher Education, Inspectorate, Science Education Unit)
- Council for Technical and Vocational Education and Training (COTVET)
- Committee of Vice Chancellors of Ghana
- Heads of Computer Science Department of Universities
- Development Partners
- NGOs
- Computer and IT industry
- Polytechnics

- Colleges of Education
- Ministry of Communications
- Ministry of Local Government & Rural Development
- Parent Teachers Associations
- National Union of Ghana Students
- Conference of Heads of Assisted Secondary Schools (CHASS)
- Conference of Principals of Teacher Training Colleges (PRINCOF)
- Association of Principals of Technical Institutes (APTI)
- Ghana National Association of Teachers (GNAT)
- National Association of Graduate Teachers (NAGRAT)
- National ICT4AD Committee (Education)
- Ghana-India Kofi Annan Centre of Excellence in ICT
- Ghana Internet Service Providers Association (GISPA)
- National Communications Authority (NCA)
- National Education Reform Implementation Committee (NERIC)

### **Collaboration**

Existing and new initiatives must be integrated into the new implementation plan for the deployment of ICT in schools. A mechanism to ensure collaboration with key initiatives such as the following must be in place:

- Global e-Schools and Communities Initiative (GeSCI)
- Microsoft Partners in Learning Programme
- NEPAD e-Schools Initiative
- CISCO Academy
- Oracle Academic Initiative
- Science Technology and Mathematics Education (STME) Clinic
- Science Resource Centres Project
- GLOBE Programme
- Intel Initiatives to support education

Whereas most of the initiatives listed above focussed on specific aspects of the ICT in Education Programme, GeSCI has made a commitment to support the implementation of this policy. The MOE is ready to work with any organisation willing to collaborate on the policy implementation.

### **4.6 Reviewing the Existing Legal, Regulatory and Administrative Framework To Support Effective Implementation**

The implementation of the ICT in education policy will rely heavily on Ghana Government's commitment to recommendations made in the ICT4AD, in particular the deployment and

implementation of suitable legal, regulatory and institutional provisions necessary to ensure successful implementation.

Towards this end and in ensuring that the ICT in Education Policy can be smoothly implemented a number of challenges have to be tackled. These include:

- i. Inadequate legal framework and related institutional infrastructure, to support ICT development and application.
- ii. Inadequate regulatory capacity, especially in the face of convergence of growing networks and services
- iii. Lack of specific and effective legislative instruments on privacy, security, cyber crimes, ethical and moral conduct, encryption, digital signatures, copyrights, intellectual property rights and fair trade practices
- iv. Need for research in ICT in Education related legal and regulatory issues
- v. Lack of legislation on e-rates (education rates)
- vi. Establish an enabling legal framework, aligned with Ghana's constitutional provisions, legislative and regulatory environment, and consistent with regional and global best practices.

In the interest of national development and in consonance with international law and individual rights, without undue compromises on intellectual property rights, protection needs to be given to learners with reference to accessing information for study purposes.