An Overview of the Status of Information and Communication Technology (ICT) in the Nigerian Education System.

By

Oyelekan, Oloyede Solomon.

Abstract

Efforts are being made in various quarters to ensure that Nigeria is not left behind in the global trend on the use of ICT in enhancing education. This paper provides a brief review of the literature on the status of ICT in the Nigerian education system. The efforts of some agencies involved in the drive are highlighted, while a review is also made on some empirical studies that have been carried out in this regard. The review indicates that Nigeria is gradually advancing towards full integration of ICT into her educational system, even though at a slow pace.

Introduction

The provision of an appropriate framework for the full integration of ICT into the education system of any nation is the responsibility of the federal or central government as the case may be. For the proper integration of the computer, and other ICT elements into the education system, there is the need for a comprehensive policy document to serve as a guide for stakeholders in the education sector. The policy document is expected to give direction to the implementation of the policy in terms of the provision of the conceptual framework, the objectives, the strategy, the action plan and the evaluation of the successes of the integration.

In 2001, the Federal Government of Nigeria published the National Policy on Information Technology, and established the National Information Technology Development Agency (NITDA) to serve as the umpire in the implementation of the policy. However, this document failed to adequately address the issue of the integration of ICT into the Nigerian education system. The document presented the issue of ICT in education vaguely. While some sectoral aspect of our society like Governance, Health, Agriculture, Arts, Culture and tourism etc were given individual sectoral treatment, there was no sectoral treatment for education in the document. The document merely mentioned issues relating to education under the sectoral application for human resources development. One would have expected education to be treated distinctively like the other sectors therein, so that there are clear cut policy statements to guide stakeholders. It is also worthy of mentioning that the document does not give any emphasis on the development of indigenous software that are in tune with the educational needs of Nigerians, neither does it address issues of its incorporation into teacher training, classroom instruction and evaluation.

The policy listed nine major strategies for realizing the objectives of applying Information Technology (IT) in human resources development, one of which is ‘making the use of IT mandatory at all levels of educational institutions through adequate financial provision for tools and resources’. While these noble strategies are applauded, the implication of the inadequacies in the document is that the National IT policy cannot adequately take care of the need of the Nigerian education system (Yusuf, 2005). Perhaps it would not be out of place to say that Nigeria has no national policy on the integrations of ICT into her education system’.
However, in the year 2004, the Federal Ministry of Education released a document termed ‘the ministerial initiative on e-education for the Nigerian education system. This document is just an approval in principle for e-education project for the Nigerian education system. It does not take the place of a national policy on ICT in education. The document lists the major objectives of e-education in Nigeria as follows:

- To enhance access to quality education.
- To improve the education delivery system.
- To ensure optimal utilization of existing ICT resource.
- To ensure a globally competitive education system, and
- To reduce /eliminate social vices in the school system.

The document also appraised e-education worldwide and makes a case for the Nigerian education system to adopt e-education. It rationalizes the need for e-education while at the same time highlighting the strategies for its adoption. The benefits listed to be derived from e-education include:

- Enhanced access to quality education.
- Improvement in the education delivery system.
- Optimal utilization of existing ICT resources.
- Ensuring a global competitive education system, and
- Reduction / elimination of social vices.

The strategies proposed are: policy enactment, capacity building, advocacy, and curriculum review. While reflecting on the Nigerian situation analysis on e-education, the Federal Ministry of Education reported in the ministerial initiative on e-education that a pilot study conducted by the National University Commission (NUC) showed that the average number of computers per school increased between 1998 and 2001, and that it witnessed a greater increase between 2000 and 2004. So also it was reported that there was a considerable increase in the percentage of schools connected to the internet, and there was an increase in the percentage of teachers that feel confident on the use of the computer in 2003.

Ict In Nigerian Education.

The Federal Ministry of Education and its agencies have initiated many ICT-driven programmes. These programmes include the SchoolNet Nigeria, the National Open University of Nigeria (NOUN) and the Virtual Library project. The NUC is implementing a number of ICT projects including Library Automation project, Nigerian Universities Management Information system (NUMIS), Nigerian University Network, Virtual Institute for Higher Education Pedagogy (VIHEP), and the Virtual Institute for Higher Education in Africa (VIHEAF). NUC is also conducting an e-learning pilot programme for Nigerian universities. Nigerian universities have been encouraged by NUC to utilize at least twenty percent of teaching and research equipment grant for development.

According to Jibril (2006), SchoolNet Nigerian was launched in September 2001 with the support of the ministries of education, telecommunication, science and technology, and the Educational Tax Fund (ETF). It is a non-profit making organization created to address the secondary education sector in Nigerian. SchoolNet Nigeria embodies a partnership between a diverse range of public and private sector interests in order to mobilize Nigerian’s human and
financial resources for the purpose of using the computer in education. It creates learning communities of education and learner who use computers to enhance education within and beyond Nigeria, and contribute to the transformation of the education system into one which participates in and benefits from the knowledge society.

The virtual library programme commenced operation in 2002 with one thousand electronic books and journal and is now running at www.nigeriavirtuallibrary.com. The Higher Education Integrated Information System is the ICT programme of the department of higher education in the Federal Ministry of Education to act as a network to provide direct access as well as coordinate and capture data from all tertiary institutions, through agencies like the NUC, National Board on Technical Education (NBTE), and the National Council on Colleges of Education (NCCE). The Department of Higher Education intended to bring all of them under one umbrella and the Federal Executive Council (FEC) had given approval in 2004 (Federal Ministry of Education, 2004). With all these programmes being put in place by the Federal Government and her agencies, there is no doubt that Nigeria is on course as far as computer integration in education is concerned, not minding the ninetieth position ranking of Nigeria on the world IT rating (The Punch, 2006).

Conferences, workshops, and seminars are being held across the country on the integration of the computer into the Nigerian education. The science Teachers Association of Nigeria’s (STAN) annual conference held in Abuja in August 2003 had many stakeholders in attendance. Lecturers from higher institutions, ministry officials, teachers across the various levels of education, and students were in attendance. This researcher attended the conference. The conference also had attendance from overseas. This included people from the United States, the United Kingdom, Ghana, South Africa, and Botswana. A total of seventy six papers were listed in the proceedings of the conference for presentation, across the various panels. The impact of NITDA was greatly felt as it conducted training for attendance of the conference using two big mobile internet buses. The training was supervised by the Director General of NITDA, the late Professor G.O. Ajayi. There was also a team of experts from the University of Botswana that conducted training for attendants, on the use of ICT in education. The papers presented reviewed the status of ICT in Nigeria as at 2003, and they provided suggestions and recommendations that could enhance ICT integration into the Nigerian education system. Particular emphasis was on the use of ICT in science education since the theme of the conference was ‘Information and Communication Technology and Science, Mathematics and Technology Education’.

In their own paper, Cirfat, Zumyil & Ezema (2003) assessed the adequacy, relevance, and utilization pattern of available ICT facilities in the two colleges of Education in Plateau state. A survey design was employed. The instrument used included questionnaires, oral interviews, and personal assessment of visible ICT facilities. The sample for the study covered all departments in the two schools of sciences in the colleges. The result indicated that the status of ICT in the two colleges of education was below average. Very few ICT facilities were available. Apart from the computer department, none of the departments in the school of sciences possessed a computer, and any of its accessories.

Lawal, Ahmadu, & Dogara (2003) also conducted an investigation into the use of ICT in teaching and learning Science, Technology and Mathematics (STM) in six selected secondary schools in Kano metropolis. They aimed at determining whether teachers made use of ICT in teaching STM, whether ICT materials were available, and whether their use enhanced teaching and learning of STM. Data was collected using two sets of questionnaires administered on STM teachers and students. Findings among others revealed that about half of the STM teachers were IT literate but very few used ICT in teaching STM. It was also discovered that ICT
materials were available but inadequate and inaccessible to STM teachers and students. They recommended among other things, that government and private school proprietors should provide enough funds for the purchase of ICT materials and to support the use of ICT in teaching and learning.

Adeyegbe, Oke, & Tijani (2003) conducted a research on the feasibility of teaching and assessing STM with ICT in Nigeria. They sought to find out the level of availability and capacity development of ICT in teaching and assessing STM in Nigeria, and when exactly should Nigeria adopt ICT in teaching and learning STM. A questionnaire was administered to collect data from six sampled secondary schools in Lagos state (two federal government colleges, and four public schools). The respondents comprised of 246 SS3 students (165 males and 81 females), and 46 STM teachers (28 males and 18 females). Analysis of data collected was through the use of frequency counts of the responses to the items on the questionnaire, which was reduced to percentages for each category of respondents. The result indicated a very low availability of ICT materials and equipment in the sampled schools although eighty percent (80%) of the respondents (both teachers and students) indicated their willingness to be trained for ICT usage. This corroborated the low level of capacity development for computer use in teaching and assessing STM subjects. From the free comments of the respondents, it was apparent that there was an eagerness to understand the usage of the computer for teaching and assessing STM subjects. The researchers expressed a high hope for the adoption and integration of the computer in the teaching and assessment of STM in Nigeria. Among the various recommendations made were that STM teachers should be trained on the use of ICT gadgets and that the present STM curriculum should be overhauled to accommodate the use of the computer in teaching and assessing STM subjects.

Busari (2003) carried out an investigation into the training status and ICT support of teacher trainers in institutions of higher learning in Lagos state. All the colleges of education, universities and polytechnics in Lagos state formed the population of the study. She found out that most teacher trainers had little ICT support from their employers and that majority of them rarely applied ICT in instructional delivery. It was recommended among other things that personal computers and ICT training (especially in educational software development) be provided for all teacher trainers and that special computer course be set up for student teachers.

Oloruntegbe & Odutuyi (2003) traced students’ poor performance in chemistry to inappropriate teaching methods. They proposed a computer based approach to chemistry instruction. Furthermore, they asserted that Computer Aided Instruction (CAI) is not just a means of transforming knowledge but more importantly, it can be an extension of both the teacher and the chalkboard. This means that topics covered in the syllabus are encoded in various computer programs in a self-instructional mode which makes it easy for the students to use with minimal assistance. It was further stated that topics that are often perceived difficult such as radioactivity, mole and stoichiometry, organic chemistry and electrochemistry can be encoded or programmed and presented in an exciting and captivating interphase that will be suitable for teaching and learning chemistry. The programming options recommend for software development for chemistry instruction include C++, Java, and Visual basics. So also, electronic learning with web-based system with colorful hyperlinks linking related topics to one another in a quick-reference manner can also be developed. This will enable a learner studying in a particular software environment to quickly navigate to other related reference materials either in library or private books collection.

In her own paper, Ezeliora (2003) listed the problems affecting effective use of IT in teaching and learning chemistry in schools to include: computer illiteracy, lack of facilitating structures, insecurity, poverty, and lack of government policy. Among the suggestions made
towards solving these problems are that government should strive to provide uninterrupted electricity to all parts of the country, and that computer education should be given its rightful place in our education system, because of its importance in the development of the system.

Earlier on, Odogwu (2000) had conducted a study to find out STM teachers competence on the use of the computer, as a tool for enhancing STM instruction and learning in secondary schools. The objectives of the study were to examine teachers’ awareness, competence and application of the computer in their lessons, and to find out whether teachers awareness, competence and application depend on gender, and subject taught. A total of 95 STM teachers (58 males and 37 females) form the sample of the study. Data were collected from the teachers using a questionnaire, and analysis of the result was done by the use of chi-square and percentage. From the analysis of the result, 21% of the teachers were not computer literate at all while 79% were literate. The analysis also revealed that 16 teachers in the sample occasionally used computer in their schools. These findings indicate that teachers were not applying computer in their teaching and this study seeks to address such deficiency. Furthermore, all the teachers sampled were willing to undergo training in computer competence. This was confirmed in the later findings of Adeyegbe et al. (2003).

Iji (2000) also examined the level of acceptability, effectiveness, and attitude of mathematics teachers towards computer utilization in the teaching of Mathematics in secondary schools. The result of his study revealed that computers could be used in the teaching of Mathematics generally. It was also revealed that the computer is a good instructional tool for the teaching of three dimensional problems as earlier discovered by Etukudo (1995). Among the recommendation from his study were that computers should be utilized in teaching other difficult concepts in Mathematics and that teachers should be further exposed to the capabilities of computers through short term courses, seminars, workshops, as well as conferences as the case may be.

Nigeria also hosted the African sub-regional ministerial conference on the integration of ICT in education in Abuja between the 26th and 30th of July, 2004. The conference had in attendance African ministers of education and experts in the education sector as well as representatives of the international development partners, the civil society, media practitioners, and the private sector. This conference was held under the auspices of the Association for the Development of Education in Africa (ADEA), and the Federal Ministry of Education in Nigeria. The conference reviewed the actions so far taken by various African countries in enhancing access to and quality education through the use of open and distance learning methodologies and ICT. The ministers developed a common understanding and appreciation of the issues regarding the integration of ICT in education and training and interacted widely with stakeholders present to gather a broad range of information about skills and experiences on the use of ICT in education. They also obtained comprehensive information on models and appropriate practices on the use of ICT in education and training at the various levels and sectors of education and training in the sub-region. The ministers considered and accepted the recommendations pertaining to the main issues, concerns, and challenges associated with the integration of ICT in education and training in the sub-region. The communiqué issued at the end of the conference listed general recommendations under the following headings: infrastructure, human resource development, research/evaluation, and monitoring and content development. Sectoral recommendations were made under the following headings: ICT in primary education, ICT in secondary education, ICT in non-formal / adult education, ICT in teacher education, ICT in higher education, electronic libraries and data project and ICT in technical, vocational and professional training.
Nigeria is benefiting from the One Laptop Per Child (OLPC) programme being championed by Professor Nicholas Negroponte. Two schools in Abuja i.e. Junior Secondary School, Jabi, Abuja and Local Authority Grammar School, Galadima, Abuja have already benefited from the programme since March 2007. In these schools, each class is made up of a maximum of forty students, each having his or her own laptop. According to a Federal Capital Universal Basic Education (UBE) official, fifteen more schools have also been packaged for the project in the 2008 UBE commission’s budget (Nigerian Television Authority nationwide news, 24th of January 2008). In the same vein, The Nigerian Communication Commission (NCC) is providing 365 schools in Nigeria with ICT centres, each to be provided with 31 computers. The NCC chairman had already commissioned the first one at Oriwu model College, Ikorodu in Lagos (Nigerian Television Authority network news, 3rd of February 2008). At the moment, awareness about the potency of the use of ICT for enhancing teaching and learning continues to increase with schools at all levels of education now making ICT literacy as part of their requirements for recruiting teachers.

Conclusion

From the above review, it is obvious that the utilization of ICT in the Nigerian Education system is still at a very low level. Not many teachers are computer literate. Few schools have computers and other ICT infrastructure, and actual utilization of computers for pedagogical effectiveness is extremely low. However, considering the present status of ICT in education in Nigeria and the various efforts that are being made to make it a reality, it is apparent that Nigeria is advancing towards proper integration of the ICT into her education, even though at a slow pace.

References


Oyelekan, Oloyede Solomon.
B.Ed, M.Ed, MSTAN. Microsoft Office Specialist. Ph.D. candidate, Department of Science Education, University of Ilorin, Nigeria.
solomonoyelekan@hotmail.com
soloyfoundation@yahoo.com
Phone: +234-8055821505,
+234-8060549228