APPLICATION OF E-TEACHING AND E-LEARNING IN NIGERIAN EDUCATIONAL SYSTEM

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ABSTRACT

The study investigates the application of e-teaching and e-learning in Nigerian educational system. Information and Communication Technology (ICT) in Education is an instrument par excellence that a nation can rely upon to bring about self-reliance. The study observed that Nigeria still experience a lag in its implementation, and this continues to be the major challenge facing access to ICT facilities in most Nigerian institutions. The study concludes that despite the roles ICTs can play in education, schools in Nigeria have yet to extensively adopt them for teaching and learning. Efforts geared towards integration of ICTs into the school system, have not had much impact. Problems such as poor policy, project implementation strategies and poor information infrastructure militate against these efforts. The study recommends that efforts should be made by government to post and provide teachers skilled in ICTs to each school to impart ICT skills to the student and also should stabilize electricity supply in Nigeria.

Keywords: E-Teaching**,** E-learning, ICT, Education

INTRODUCTION

The world is moving at an unimaginable speed in the area of information use and dissemination. According to Olaniyi (2006), the use of Information technology, knowledge and information can be transferred and cross-fertilized in real time. Hence, the need to pay attention to the way information technology has changed the educational sector through the internet. E-teaching and E-learning has been described as one of the educational challenges of the modern age about which progressive academic institutions must make bold efforts to excel and compete favourably in the global market where education is a commodity.

E-Teaching and E-learning has become a new paradigm and a new philosophy in library services as well as educational sector with a mission to serve as a development platform for present-day society based on knowledge. What then is e-teaching and e-learning? E-teaching is the appreciation of live teaching with streaming lectures, whiteboards, downloadable slide sets and discussion forum. E-teaching is an automation of an existing teacher-centered educational approach. The real work is in creating content and learning management systems that support e-learning. According to Olaniyi (2006), e-learning is all about learning that occurs at the computer. In our contemporary world, the learning through the aid of a computer simply means online knowledge acquisition through the internet or offline through CD-ROM etc. In other words, it is the use of network technologies to create, foster, deliver, and facilitate learning, anytime and anywhere. Horton (2005) defined e-learning as the use of internet and digital technologies to create experiences that educate our fellow human beings. E-learning has the potential to revolutionised the way we teach and how we learn (DfES, 2003).

Advances in ICT have really revolutionised the way we teach and how we learn in many ways; for instance, increasing access to post-secondary instruction, improving the availability of educational resources, and facilitating meaningful interaction among learners. Harnessing the power of ICT has become a critical strategy among institutions eager to offer an affordable, efficient, and flexible learning environment for rapidly growing and diverse communities of learners. Many scholars have viewed distance and online education as alternative, sometimes inferior, education for individuals with

limited access to traditional higher education institutions (HEIs) or those not committed to deep learning (Rich, M. 2008).

Today, technology enhanced learning, including distance and online instruction, is recognised as a viable tool necessary for preparing citizens to participate in the technologically driven global environment. A multidisciplinary approach to online pedagogical research recognizes the value of technology enhanced teaching and learning as critical in the mix of diverse strategies. Its centrality in the global marketplace has been enhanced by a new culture shared by many educators. A culture diametrically opposed to elitist views of education as a privilege. A culture rooted in the belief that a more open education system enables increased contribution to the global marketplace of ideas. This new culture empowers citizens of the world to share knowledge globally where diverse voices are often underrepresented. The culture has been exemplified by an open movement, with diverse champions from remote village classrooms to ivory towers. Unfortunately, Nigeria as a developing country is still backward in ICT application and use (Aduwa-Ogiegbean and Iyamu, 2008).

Therefore, this paper particularly dwells on the importance of application of e-teaching and e-learning in Nigerian educational system and the causes of low levels of e-teaching and e-learning in Nigerian educational system use in Nigerian schools, as well as provides recommendations.

E-Teaching and E-Learning Policy Framework in Nigeria

For a very long time successive governments in Nigeria have consistently formulated Policies which were directed towards ensuring that there are equal and adequate educational opportunities at all levels.

As far back as 1977, Government began searching for alternative models to the traditional conventional system, which was rather restricted and limited in scope. In response to the need for a more elastic and accessible model of education, Government opted for a semblance of e-teaching and e-learning educational system. Thus, it can be said that the foundation of e-teaching and e-learning educational system in Nigeria was laid through the National Policy on Education of 1977, subsequently revised in 1981.

The current National Policy on Education (NPE) recognizes the place of e-learning educational system in achieving lifelong education and affirms that lifelong education shall be the basis of the nation's education policy. It went further to state that at any stage of the educational process after junior secondary education, an individual shall be able to choose between continuing full-time studies, combining work with study, or embarking on full time employment without excluding the prospect of resuming studies later. This envisaged the development of e-teaching and e-learning educational programs in the country. The NPE defined e-teaching and e-learning educational system as the mode of teaching in which learners are removed in time and space from the teacher. It uses a variety of media and technologies to provide and/or improve access to good quality education for large number of learners wherever they may be.

According to the NPE, the goals of e-teaching and e-learning educational system are to:

i. Provide access to quality education and equity in educational opportunities for those who otherwise would have been denied.
ii. Meet special needs of employers by mounting special certificate courses for their employees at their work place.
iii. Encourage internationalization especially of tertiary education curricula.
iv. Ameliorate the effect of internal and external brain drain in tertiary institutions by utilizing experts as teachers regardless of their locations or places of work.

National Information Technology Development Agency (NITDA) ICT Policies

Nigeria started implementing its ICT policy in April 2001 after the Federal Executive Council approved it by establishing the National Information Technology Development Agency (NITDA), the implementing body. The policy empowers NITDA to enter into strategic alliances and joint ventures and to collaborate with the private sector to realise the specifics of the country's vision of, "making

Nigeria an IT capable country in Africa and a key player in the information society by the year 2005 through using IT as an engine for sustainable development and global competitiveness." This vision is yet to be fulfilled. Outlined below are some of the objectives of Nigeria's ICT policy:

i. To ensure that ICT resources are readily available to promote efficient national development
ii. To guarantee that the country benefits maximally, and contributes meaningfully, by providing the global solutions to the challenges of the Information Age.
iii. To empower Nigerians to participate in software and ICT development
iv. To encourage local production and manufacture of ICT components in a competitive manner
v. To establish and develop ICT infrastructure and maximize its use nationwide
vi. To empower the youth with ICT skills and prepare them for global competitiveness
vii. To integrate ICT into the mainstream of education and training
viii. To create ICT awareness and ensure universal access in promoting ICT diffusion in all sectors of national life.
ix. To create an enabling environment and facilitate private sector (national and multinational) investment in the ICT sector.
x. To encourage government and private sector joint venture collaboration
xi. To develop human capital with emphasis on creating and supporting a knowledge-based society.
xii. To build a mass pool of ICT literate manpower using the NYSC, NDE, and other platforms as a train-the-trainer scheme for capacity-building.

Fundamental reasons for E-teaching and E-Learning

As the e-teaching and e-learning keeps growing an increasing amount of learning activities can be expected through interactivity within the academia and the e-teaching and e-learning materials (Zheng & Ferris, 2008). Therefore the application of e-teaching and e-learning in Nigerian educational system cannot be far from the following especially in consideration of the onset proposal for redesigning the minimum standard for Nigerian tertiary institutions. The e-teaching and e-learning facilities when judiciously and fully implemented would:

i. Reduce and/or eliminate the costs for instructor fees and materials to certain level.
ii. Reduce time of learning and the time employee's absence from duty.
iii. Increased retention and enhanced hands-on application unlike traditional methods.
iv. Help managed instruction and progress via portal.
v. Make easy use of multimedia in practice and assessment according to learners' abilities.
vi. Allow for automated monitor of user's progress with supervisor and teachers.
vii. Be highly interactive as it engages users and pushes them than pulling them to progress.
viii. Help fast learners go with their speed in any course and avoid redundancy.
ix. Make slow learners go on their own pace by eliminating frustration with themselves, their fellow learners, and the subject matter.
x. Make knowledge cumulative as lessons are built consecutively and more flexible.
xi. Make learning takes place anytime-anywhere and greatly increases knowledge retention.
xii. Assist e-learners create, have access, view, modify and print or send documents.
xiii. Enhance evaluation as it become self-paced because e-learning is a networked phenomenon.
xiv. Make easy delivery of content using standard Internet technology as it enhances surf ability.
xv. E-learning supersedes training and instruction as it is a tool that improves behavior performance.

The benefits of e-learning are many. It may as well including cost-effectiveness, enhanced responsiveness to change, consistency, timely content, flexible accessibility, and providing customer value (Olomo, 2001).

How E-Teaching and E-Learning Can Improve Qualitative Education in Nigeria

Improving the quality of education and training is a critical issue, particularly at a time of educational expansion. ICTs can enhance the quality of education in several ways: by increasing learner motivation and engagement, by facilitating the acquisition of basic skills, and by enhancing teacher

training (Wadi & Sonia, 2002). ICTs are also transformational tools which, when used appropriately, can promote the shift to a learner-centered environment. The following are some of ways in which ICT have enhance quality education:

Motivating to learn

ICTs such as videos, television and multimedia computer software that combine text, sound, and colorful, moving images can be used to provide challenging and authentic content that will engage the student in the learning process and tale collaboration. Interactive radio likewise makes use of sound effects, songs, dramatizations, comic skits, and other performance conventions to compel the students to listen and become involved in the lessons being delivered. More so than any other type of ICT, networked computers with Internet connectivity can increase learner motivation as it combines the media richness and interactivity of other ICTs with the opportunity to connect with real people and to participate in real world events.

Facilitating the acquisition of basic skills

The transmission of basic skills and concepts that are the foundation of higher order thinking skills and creativity can be facilitated by ICTs through drill and practice. Educational television programs such as "*Who Want to be a Millionaire*"; Nigeria's biggest thought provoking program, enlightens people because of the questions that are required to be answered before the cash price is awarded. Questions are drawn from all works of life ranging from religious, cultural, educational to contemporary issues, thereby facilitating the acquisition of basic skills amongst populace.

Enhancing teacher training

ICTs have also been used to improve access to and the quality of teacher training. For example, institutions like the Cyber Teacher Training Center (CTTC) in South Korea are taking advantage of the Internet to provide better teacher professional development opportunities to in-service teachers. The governmentfunded CTTC, established in 1997, offers self-directed, self-paced Web-based courses for primary and secondary school teachers. Courses include "Computers in the Information Society,""Education Reform," and "Future Society and Education." Online tutorials are also offered, with some courses requiring occasional face-to-face meetings (Jung, 2002).

In Nigeria, The National Open University of Nigeria, satellite-based video and audio conferencing was founded in 2000 by the then Nigerian President, Olusegun Obasanjo, supplemented by print-materials and recorded video, to train teachers who have not obtained the requisite degree for their current job placement from any geographical distance. The teachers interacted with remote lecturers by telephone and fax.

The E-Learning Adaptation in Nigerian Institutions

In Nigeria one of the universities adopting e-learning is National Open University of Nigeria (NOUN). One of the key advantages of employing e-learning for maintenance management training is related to the flexibility it offers and the ease of adaptation of how the training is delivered to individual learners (Yusuf, 1999). Much of the adaptation capacity of learning management solutions, draw inspiration from an understanding of the way human beings learn. Two are the key principles involved in such a process:

  i.   Active involvement of learners in learning motivates them to learn; since learning is seems to be a two way traffic, i.e. from teacher to learner and vise-visa.
  ii. As individual differences learners learn at different rates and ways; hence, customized techniques and materials lead to efficient learning.

There are three basic learning theories that influence e-learning (Keegan, 1993). These include:

Behaviorism

This treats learning as a set of changes to the learner as he/she reacts to environmental events. Memorization and imitation are critical in this learning process. The focus here is always on the teacher, or the computer providing the carefully arranged material but not the learner.

Cognitive Science

It bases learning on attention, motivation, perception and other internal processes. It focuses on screen design and on human / computer interaction, where the teacher usually has the role of the facilitator or partner.

Constructivism

This is a paradigm that postulates learners can construct their knowledge as they react with and interpret their environment. The most important thing here is that focus is centered on the learner. Thus, the aim is to provide stimuli and support for the users to construct their knowledge.

Challenges Facing E-Teaching and E-Learning Educational System in Nigerian Schools

In spite of the bright prospect of e-learning in the country, it is so worrisome that there are some hurdles militating against the effective use of the educational technology in Nigeria. Some of these obstacles are:

Lack of qualified teachers to teach ICT in schools

The demand for ICT learning has been tremendous and the number of teachers who are trained to teach ICT cannot meet the demand. There are more students willing to be taught computing skills than there are teaches to transfer the skills.

Lack of computers

Computers are still very expensive and despite spirited efforts by the government agencies, NGO, corporate organizations and individuals to donate computers to as many schools as possible, there still remain a big percentage of the schools unable to purchase computers for use by their pupils.

Lack of electricity

Many schools are still not yet connected to electricity; Nigeria being a developing country, the government has not been able to connect all parts of the country to the national electricity grid. Consequently those schools that fall under such areas are left handicapped and may not be able to offer computer studies.

Computers are still expensive in Nigeria

In a country with high rate of inflation, majority of the individuals and schools cannot afford to buy a computer and consider it as a luxury item, more expensive than a TV. While second hand computers cost as N45, 000 naira and branded new computers being sold at between N98,000 and above.

Broken down computers

While a good number of schools have benefited from donated used computers, they have not been adequately equipped with the same on maintenance and repair, hence its very common to see a schools computer lab full of broken down computers, some repairable and some not. This has actually been a major problem, and the government has now put strict measures on any person, NGO or corporate bodies willing to donate 2nd hand computers. (It is seen as a dumping ground); e-waste management.

Burglary

The fact that computers are still very expensive in Nigeria; this makes them a target for thieves who usually have ready markets to another party at a much less figure. This has made many schools to incur extra expenses trying to burglar proof the computer rooms. This extra expense makes some schools shy away from purchasing computers for their students.

Lack of internet or slow connectivity

Most schools are not able to connect to the World Wide Web, due to the high costs involved in the connectivity. On average, it may cost approximately $150 per month to connect to about 15 computers on a bandwidth of 128/64kbps. This is considered as very expensive for a very slow speed.

Increased moral degradation

Internet pornography, cyber bullying and other anti-social behaviors is a worrying emerging problem.

The dilemma which arises in providing educational technology stems from a lack of financial resources and a limited distributive capacity. In addition, Nigerian government has not been able to employ teachers, and provide resources to keep up with this demand. This brings about compromised quality of education. Furthermore, Nigerian government faces the predicament of educational expansion that corresponds with economic development. Despite the setbacks, access to education is a strong focus of the Nigerian government.

CONCLUSION

E-learning has every sign of long survival as long as such digital devices become more available. That means when the devices become more afforded, the connectivity bandwidths become widely use and less constraint; the multimedia applications will prosper. The survival of tertiary educational institutions in the 21st century will increasingly rely on various forms of electronic delivery system and communication facilities available in markets that are required to make education to be more flexible.

The adoption and use of ICTs in schools have a positive impact on teaching, learning, and research. Despite the roles ICTs can play in education, schools in Nigeria have yet to extensively adopt them for teaching and learning. Efforts geared towards integration of ICTs into the school system, have not had much impact. Problems such as poor policy and project implementation strategies and poor information infrastructure militate against these efforts. For e-learning to succeed in Nigeria, there is the need to build on another important pillar i.e. the existence of befitting infrastructure and some degree of viable connectivity. A growing difference in market liberalization of the Internet-access supply is leading to another kind of "digital divide" on the global scale many countries have introduced or are introducing telecommunications regulations that discourage the development of Internet-access service. Nigeria should take heed of that.

RECOMMENDATION

In order to ensure that ICTs are widely adopted and used in Nigeria's school system, the following efforts should be taken.

i. Efforts should be made by Ministry of Education (at Federal and State levels) to post teachers skilled in ICTs to each school to impart ICT skills to the students. Also the Federal Ministry of Mines and Power should work towards stabilizing electricity supply in Nigeria, and all schools should be made beneficiaries of ICT projects.

ii. The accreditation teams of the National University Commission (NUC) as well as the National Commission for Colleges of Education (NCCE) and the National Board for Technical Education (NBTE) should revise the syllabus of the Nigerian Universities, Colleges and polytechnics respectively to include virtual courses that will be internet based through a well established Learning Management System (LMS) tools such as Moodle and Blackboard.

iii. Government should provide institutions at all levels in the country with adequate information-technology facilities.

iv. Government should properly found Institutions so as to be able to compete with their other institutions abroad.

v. Government should ensure adequate electricity supply in schools.

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