

E-Learning: A Veritable Tool to Step-Up Accessibility in the Nigerian Educational Sector

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Abstract

This paper addresses E-learning as a veritable tool to step up accessibility in the Nigerian educational sector highlighting the concepts of ICT as a tool for improving educational process, access and availability of ICT resources in Nigeria secondary schools, e-learning technologies and sustainable development as well as e-learning/online learning/distance learning. Also, challenges to e-learning in the Nigerian higher education sector and benefits of e-learning in the Nigerian educational system were treated. Since e-education facilitates teaching and learning, it is therefore suggested that a comprehensive feasibility study be adopted by all stakeholders, there should be mass computer literacy programmes, government should ensure the growth of ICT from primary to tertiary institution, and the ICT teachers should be motivated through incentives to enhance job satisfaction.

Keywords: *E-learning, ICT, distance learning, online learning, Nigerian education*

Introduction

Education in Nigeria is structured in three tiers: basic education, secondary school education and tertiary education. Traditional basic education offered to children between ages four and 14 in Nigeria consists of three years of early childcare and development education, 6 years of primary education and three years of junior secondary. Non-traditional/basic education includes educational outreach to nomadic and migrant children, almajiris and mass literacy intervention. Traditional basic education is followed by three years of senior secondary school and then tertiary education. (Nwangwu,2012).

E-learning a sub-system within ICT is the electronic process which enhances the delivering and administration of learning opportunities and support via computer, networked and web-based technology to help individual performance and development. The basic principle of e-learning is connectivity – the process by which computers are networked to share information which can connect people. This is provided for by what is often called the e-learning landscape or architecture, which refers to the hardware, software and connectivity components required to facilitate learning. (Okure,2008 p 303).

The National Policy on Education (2004.17) places emphasis on the provision and utilization of information and communication technology (ICT) when it states that “in recognition of the prominent roles of information and communication technology in advancing knowledge and skills necessary for effective functioning in the modern world, there is urgent need to integrate information and communication technology (ICT) into education in Nigeria”.

This paper therefore seeks to focus on e-learning as a veritable tool to step up accessibility in the Nigerian educational sector.

ICT as a Tool for Improving Educational Process

Today, ICT is a very important tool for improving teaching and learning. It has transformed the traditional method of teaching and learning where the teacher according to Ike (2009) like "Master Bull Frog" dishes out information to the learners who listened and watched. ICT has made teaching and learning very interactive, making the teacher to be a facilitator while the students do the actual work. The use of ICT teaching tools like computer, multimedia, projectors, interactive whiteboard (Smart Board), power point, word processors, spreadsheets, databases, macromedia flash, hyperlink mark up language (HTML), etc in preparing and delivering of lecture, one could imagine how lovely and interactive the lecture class would be.

With the use of ICT facilities, students do not need lecturers/teachers for them to learn as Opara (2003) opined that with the computer-based teaching, it becomes easy for students to learn on their own and at their own pace. ICT has provided enough instructional materials for all students and instructors in different areas of study. With Computer Aided/Assisted Instructions (CAI), Computer Aided Learning (CAL), in this area, students and other interested scholars can learn at their own time and pace. CAI are information that help teach or encourage interaction which is presented on computers in the form of text or multimedia formats, which include photographs, videos, animation, speech, and music (Arnold, 2008). The guided drill and practice exercise which is a computer program that poses questions to students, returns feedback and selects additional questions based on the students' responses is example of CAI. Recent guided drill systems incorporate the principles of education in addition to subject matter knowledge into the computer program. The dawn of internet has made provision for all these tutorials available online.

Access and Availability of ICT Resources in Nigerian Secondary Schools

ICT resources in Nigerian secondary school is still grossly inadequate. Studies carried out on secondary school science teachers by Aladejana revealed that the schools lacked laptop, LCD projector, video recorder, talking books and floor robots. She said 4.0% of the sampled schools have an overhead projector, 4.0% have fixed line internet access and that 5.67% of the teachers have personal computers majority used for business and commercial purposes. She however submitted that classrooms are still very much traditional without much influence on ICT.

The development of ICT-based initiatives in Nigeria was kicked-started in 2002 (Jegede 2002). ICT-based initiatives is to develop computer and technology literacy through the introduction of computers in secondary schools similar to what has been done in many other countries including Turkey Morocco and others. Concerted efforts are on to improve the level of ICT infrastructure and accessibility. Education Tax Fund and School Net Nigeria have projects in which there is a provision of shared internet access for schools and communities. School Net Nigeria is an internet project for teachers and technical training development at 35 rural sites. Education Tax Fund, private sector, MOE, Telecom companies all worked together to start school net Nigeria.

Schools have been benefiting from series of aids and initiatives. Universal Service Provision Fund (USPF) has really assisted in making provision for ICT resources in secondary schools. A total of 109 primary and secondary schools have been selected as beneficiaries of the first phase of the schools, University Access Programme to Digital Life Style Project of the (USPF), an initiative of the

Nigeria Communications Commission (NCC). The project was to equip the benefiting schools with (ICT) tools (Ndukwe 2008).

Conclusively the use of ICT in secondary school is still at the initial stage. The school system still face a lot of challenges as far as availability of infrastructure is concerned. Access to ICT is still met with constraints in terms of infrastructure, funding and government little attention to its utilization.

E-learning Technologies and Sustainable Development in Nigeria

Okure (2008 p 306) posit that citizens of this country who have not been privileged to attend the conventional University had demanded for higher education for their job improvement. Among such are young married women who could not easily go back to school with their tender children. E-learning facilities can offer opportunity for them to still be nursing mothers at home and also acquire higher education.

In the light of this, Akukwe (2003) affirms that "with the invention of the computer, the society gradually got transformed from an industrial society into an information society whereby the collection, processing and distribution information replaces the manufacturing of goods as primary source of wealth and work".

Okoli (2007) asserts that ordinarily one would look at this statement with suspicion, but that a careful consideration would reveal that nowadays information services garners a lot of money which is wealth. The instance of the open university makes the E-learning indispensable for this nation. The various gadgets can be utilized to enable citizens benefit from the education provided by the open university. The number of universities in the country has not been adequate to admit all the university aspirants. Besides, the Nigeria University System has developed less rationally than anticipated.

The system had a good beginning from the colonial times and was effective up to the late 1970s as an instrument for national development until its nature changed from late 1980s owing to enrolment explosion. The total enrolment in the universities in 1980 was 73,425 but by 1990, this figure had risen to 180, 871 and by 2001 university education because of the number of students then exceeded the available facilities while the staff/students ratio increased beyond manageable proportions.

Poor staffing is another problem that undermines the issue of quality in National University Commission (NUC). Statistics of 2000 showed a total of 18,328 academic staff in universities to take care of 244,871 students (FME 2003 in Okure 2008). By NUC staffing norms, a total of 33,951 should have been in the system at that time. This means that there was a short fall of 15,718 (46%) in Nigerian universities in 2000. Academic staff is the most crucial resources of all the resources required by the knowledge industry of this nation. This intellectual resource entity which Nigeria is not able to sustain and adequately preserve, constrains universities capacity to produce graduates who could be self sustaining through engagements in viable vocation and entrepreneurship projects. The E-learning technology is the answer for training the required staff to take care of teachers hence institutions can produce skilled graduates to sustain the nation.

E-learning, Online Learning and Distance learning Environments

The origins of the term e-learning is not certain, although it is suggested that the term most likely originated during the 1980s within the similar time frame of another delivering mode online

learning. While some authors explicitly define e-learning, others imply a specific definition or view of e-learning in their article. In particular, Ellis (2004) disagrees with authors like Nichols (2003) who define e-learning as strictly being accessible using technological tools that are either web-based, web-distributed or web-capable. The belief that e-learning not only covers content and instructional methods delivered via CD-ROM, the internet or an intranet (Benson et al. 2002; Clark, 2002) but also includes audio and videotape, satellites broadcast and interactive TV is one held by Ellis. Although technological characteristics are included in the definition of the term, Tavangarian, Leybold, Nolting, Roser and Voigt (2004) as well as Triacca, Bolchine, Botturi and Inversini (2004) felt that the technology being used was insufficient as a descriptor. Tavangarian et al. (2004) included the constructivist theoretical model as a framework for their definition by stating that e-learning is not only procedural but also shows some transformation of an individual's experience into the individual's knowledge through the knowledge construction process. Both Ellis(2004) and Triacca et al. (2004) believed that some level of interactivity needs to be included to make the definition truly applicable in describing the learning experience, even though Triacca et al. (2004) added that e-learning was a type of online learning.

Online learning is described by most authors as access to learning experiences via the use of some technology (Benson, 2002; Carliner, 2004; Conrad, 2002). Both Benson (2002) and Conrad (2002) identify online learning as a more recent version of distance learning which improves access to educational opportunities for learners described as both nontraditional and disenfranchised. Other authors discuss not only the accessibility of online learning but also its connectivity, flexibility and ability to promote varied interactions (Ally, 2004; Hiltz & Turoff, 2005; Oblinger & Oblinger, 2005). Benson (2002) makes a clear statement that online learning is a newer version or an improved version of distance learning. These authors, like many, believe that there is a relationship between distance education or learning and online learning but appear unsure in their own descriptive narratives.

Distance education is the most renowned descriptor used when referencing distance learning. It often describes the effort of providing access to learning for those who are geographically distant. The instructional delivery included an instructor who was physically located in a different place from the learner, as well as possibly providing the instruction at disparate times. Distance education uses emerging media and associated experiences to produce distributed learning opportunities. Keegan (1996) suggested that the term distance education is an "umbrella" term consisting of correspondence education or correspondence study that may have once been synonymous used, being clearly identified as a potential offspring of distance education.

The term then evolved to describe other forms of learning e.g online learning, e-learning, technology, mediated learning, online collaborative learning, virtual learning, web-based learning etc. (Conrad, 2006). Thus, the commonalities found in all the definitions is that some form of instruction occurs between two parties (a learner and an instructor), it is held at different times and/or places, and uses varying forms of instructional materials (Moore, 2011).

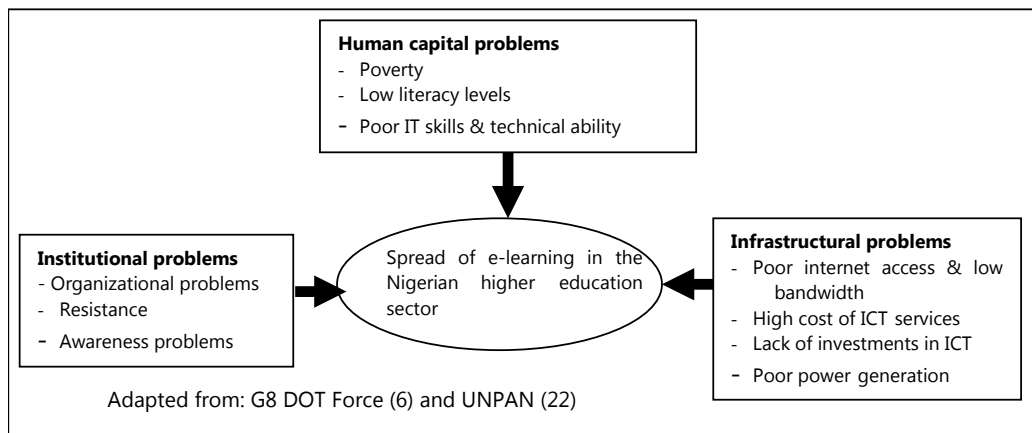
Challenges to e-learning in the Nigerian Higher Education Sector

According to Infinedo (2007 p 49-51) the conceptual framework illustrated in figure 1 is used to guide the discourse on the challenges facing the diffusion of e-learning in the Nigerian higher education environment. It draws upon developmental reports of notable bodies, including the G8 DOT Force, UN ICT Task Force and UNPAN. These bodies have used a similar model or framework to describe the problems faced by developing societies in spreading ICT-based initiatives.

In brief, the broad categories of factors believed to be hindering efforts of developing societies in using ICT products for development include the following:

1. Infrastructural problems, i.e. poor information and telecommunication technologies facilities
2. Institution problems; and
3. Human capital problems, e.g. awareness problems.

In fact, UNPAN (2005) highlighted poverty, low levels of literacy, lack of adequate infrastructure, the high cost of ICT services, lack of investments, poor institutional structures, absence of international cooperation, and lack of security (in that order) as the major barriers to achieving an information society in developing countries.



Human Capital Problems

As previously indicated, Nigeria is poor and indebted. The dire economic situation for both the country and its population exacerbates their inability to make use of ICT products especially those related to educationally related initiatives. The cost of a personal computer (PC) in Nigeria is six times the monthly wage of an average worker. The cost of subscribing to a telephone line or owning one is beyond the reach of an average citizen. The same is true for the procurement of internet access in Nigeria; ordinary citizens find it difficult to own such services due to lack of financial resources. It goes without saying that a lack of funding is a major problem to the Nigerian education sector. As such, it is not uncommon to read how limited financial resources have stalled some notable ICT-enabled initiatives in the Nigerian education sector.

Furthermore, Nigeria lacks qualified information technology (IT) professionals as Nigerian universities do not graduate sufficient numbers of skilled IT professionals to match its current ICT needs. Oyebisi and Agboola note that the highest enrollment in the University for Science and Technology in Nigeria between 1991 and 1998 was 0.31 per 1000 and only 0.05 per 1000 students earned a postgraduate degree in the field. It is easy to see how e-learning projects can suffer when skilled professionals are not readily available.

Institutional problems

Effective organizational skills are needed to develop and deliver education using ICT. One might be tempted to call the role of policy makers and administrators in the education sector in Nigeria into question. Do they understand what it takes to initiate and deliver education using ICT facilities? The reality is that functionaries in developing countries lack the necessary expertise to manage new innovation, including the implementation and delivery of ICT-enabled education. The report by the Commonwealth of Learning International suggests that the administrators in the Nigerian higher education sector are either unfamiliar with the use of ICT in education or unwilling to change from the status quo.

Commenting on the barriers to distance education using ICT in Nigeria, Mac-Ikemenjima notes "resistance to change from (the Nigerian) traditional pedagogical methods to more innovative, technology based teaching and learning methods, by both students and academics" as a major problem facing such initiatives in the country. Similarly, Folorunso et al shows a lack of awareness regarding how e-learning can be used by higher education students as a major setback.

Infrastructural Problems

As is the case with the rest of Africa, Nigeria's internet access is poor. As of 2005, there were about 3 million internet users in a country of 140 million inhabitants – this is less than 1% of the population. Only recently did a few countries in Africa procure bandwidths greater than 10 million bps. Previously, many countries in Africa, including Nigeria, had bandwidths between 64,000 bps and 256,000 bps due to high international tariffs and lack of circuit capacity in the region. Investments in the telecommunications sector used to be very low on the African continent, but it is encouraging to notice that events are changing for the better. Computers and affordable internet access are two vital facilities required for distance education and e-learning, but with such dire statistics for countries like Nigeria on the Africa continent, it remains to be seen how progress can be made by Nigerian higher education vis-à-vis implementing e-learning. Another major infrastructural challenge in Nigeria concerns its inadequate power generation.

Benefits E- education in the Nigerian Educational System

Osuji (2004) asserts that the adoption of the e-education will ensure the Nigerian education system the following benefits:

- ❖ **Enhanced Access to Quality Education:** e-education has the potential for reaching out to many learners and offering education whose quality is not compromised.
- ❖ **Improvement in the Education Delivery System:** ICT tools aid both teachers and students in the teaching-learning process, self-learning capabilities of ICT education will enhance mastery of school subject by Nigerian students. Teachers in the Nigerian school system would equally be aided.
- ❖ **Optimal Utilization of Existing ICT Resources:** A scan of the school system in Nigeria will reveal packets of efforts at the local, state and federal levels at implementing some form of ICT-enabled education delivery.
- ❖ **Ensuring a Global Competitive Education System:** There is trend towards a global adoption of e-education as a delivery system. In the near future, an education system that does not proceed along the part will produce graduates that are not globally competitive.

- ❖ **Reduction/Elimination of Social Vices:** A number of vices that plague the Nigerian educational system such as examination malpractice, cultism are caused by a host of factors including poor academic preparation of students. Since e-education has the potential of elevating students' performance, and increasing time, it will constitute to reducing the incidents of the vices and overtime, their elimination. Pp 11-12.

Summary and Conclusion

This study bordered on e-learning as a veritable tool to step up accessibility in the Nigerian educational sector. Related concepts were addressed like ICT as a tool for improving educational process, access and availability of ICT resources in Nigerian secondary schools, e-learning technologies and sustainable development, e-learning/online learning/distance learning, challenges to e-learning in the Nigerian higher education sector and benefits of e-education in the Nigerian educational system.

The adoption of e-learning via ICT will lead to the wedlock between technology and education. It will take distance out of education and enhance interactivity between the learner and the teacher. Moreover, the division between open and distance education institution and the traditional institution would be eliminated.

Suggestions

- It is a well known fact that for e-education to succeed, lots of things have to be put in place, among which are comprehensive feasibility study by all the stakeholders to determine the level of awareness and preparedness for the take off of e-education in the various educational sectors of Nigeria.
- There must be mass computer literacy programmes and train the trainers workshops must be organized at federal, state and local government levels to produce IT profession and to train the would be trainees at the various levels of our education.
- The administration has tried to help the country in terms of internet development, but a lot till needs to be done. Government should work closely with internet services providers (ISPs) to reduce cost of internet service. This is necessary if Nigerians are to benefit fully from the present online learning of distance education being practiced worldwide.
- Government must provide a special programme of studies through distance learning to take care of the educational needs of those that are qualified for university education but could not be accommodated for lack of space in the existing tertiary institution.
- To demystify information and compunction technology in Nigerian educational system, government must include ICT in secondary school curriculum and provide all secondary school teachers with personal laptops which they themselves can help to fund under an arrangement.
- Provision of alternative power supply in view of the present poor power supply situation in the country.
- Making the use of ICT mandatory at all levels of Nigerian educational institution through adequate financial provision for both human and material resources.
- Ensure the growth of ICT from primary to tertiary education level through the development of relevant ICT curricula for each level of education.
- ICT software that would meet our local needs should be developed.

- Encourage ICT teachers with appropriate incentives that will make them to be dedicated, motivated and derived maximum job satisfaction.

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