

Utilization of e-learning in Achieving Distance Education in Nigeria

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Abstract

E-learning presents an entirely new learning environment for students, thus requiring a different skill set to be successful through critical thinking, research, and evaluation skills growing in importance as students have increasing volumes of information from a variety of sources. Therefore, this paper focuses on the utilization of e-learning facilities in achieving distance education in Nigeria. The paper further reviewed the concept of utilization of e-learning facilities, concept and history of e-learning; concepts and history of distance education; advantages of e-learning to distance education; e-learning facilities as well as the impact of e-learning in distance education and human development in Nigeria. Based on this premise, it was recommended that there should be need to establish distance education centres in all universities in Nigeria and collaboration with persons for the development of courseware for the growth of the program. In addition, proper orientation should also be given to students on how to use these devices to promote learning.

Key words: E-learning, Distance Education, and E-learning Facilities

Introduction

The role of e-learning in teaching and learning has become one of the most important and widely discussed issues in contemporary education policy. E-learning is an important factor in this information age; it holds a great promise to improving teaching and learning in educational institutions, when properly adopted and applied. It is an important instructional tool to facilitate the transfer of many types of information and an effective means of communication in schools and colleges. E-learning has manifested in

one-to-one (teacher-to-student), one-to-many (teacher-to-group) and many-to-many (group to group) approaches to instruction. E-learning is the application of a whole range of technologies involved in information processing and electronic communications, such as computers, Internet, e-mail, computer software, satellite, mobile communication gadgets, and other allied electronic devices for dissemination of knowledge and information. It involves the application of computer and information technology in

teaching and learning (Adelabu & Adu, 2015).

Nigeria is the most populous black nation in the world with almost 168 million people, 30 million of which are students and has the challenge of both access to and quality of education occasioned by poor funding and inadequate manpower and infrastructure (Ayo, Odukoya & Azeta, 2014). As a way of closing this gap, the advent of technological advancement powered by the internet has created a huge impact on learning thereby bringing about a paradigm shift in education (Ayo, Odukoya, & Azeta, 2014). Therefore, the application of Information and Communication Technology-based learning has great potential for increasing access to education in Nigeria through the use of resources such as the computer, scanner, printer, Intranet, Internet, e-mail, videophone systems, teleconferencing devices, wireless application protocols (WAP), radio and microwaves, television and satellites, multimedia computer and multimedia projector in curriculum implementation. Also, curriculum content in the form of texts, and visuals, e.g. pictures, posters, videos, audio/sound, multicolor images, maps, and graphics, can be simultaneously presented online to students in both immediate locations (classroom model of e-learning) and various geographical distances (Distance Education model of e-learning) (Adu, Eze, Salako & Nyangechi, 2013).

Consequently, e-learning is not a new phenomenon in promoting education in some parts of the world because presently, institutions in Nigeria are using it to promote distance education. E-learning is the use of electronic technology to deliver education and training applications, monitor learner's performance and report learner's progress. Hedge and Hayward (2004) defined e-learning as an innovative approach for delivering electronically mediated, well-

designed, learner-centered and interactive learning environments to anyone, anyplace, anytime by utilizing the Internet and digital principles which is all about learning with the use of computers. The convergence of the internet and learning, or Internet enabled learning is called e-learning (Ajadi, Salawu & Adeoye, 2008). The applications and process of e-learning include computer-based learning, web-based learning, virtual classroom and digital collaboration where contents is delivered via the internet, intranet/extranet, audio and or video tapes, satellite TV and CD-ROM (Ajadi, Salawu & Adeoye, 2008).

E-learning presents an entirely new learning environment for students, thus requiring a different skill set to be successful. Critical thinking, research, and evaluation skills are growing in importance as students have increasing volumes of information from a variety of sources to sort through (New Media Consortium, 2007). Also, particularly in courses that are entirely electronic, students are much more independent than in the traditional setting. This requires that they be highly motivated and committed to learning, with less social interaction with peers or an instructor. Students in online courses tend to do as well as those in classrooms (Olojo, Adewumi, & Ajisola, 2012).

Several schools and colleges today have started offering online courses. Several academic institutions have been established in Nigeria in the last few years that offer accredited career enhancement programs to students (Sharon, 2012). Despite the proliferation and benefits of distance education in Nigeria, the quality of delivery and infrastructure has been a major concern to stakeholders. The basic characteristic of Distance Education is the separation of teacher and learner in space and time. The National Universities Commission (NUC), the Supervisory Agency of University

Education in Nigeria, in an attempt to ensure that standards are maintained in the operations of distance education enacted some regulations. One of such is the stipulation that the distance education study centers should offer both academic and social support programmes. Students should have easy access to ICT facilities for learning purposes. For specific programs, functional internet access is required at all study centres (NUC, 2013).

Operationally, distance education is a formal education system that deploys ICT facilities to communicate, teach, coach and facilitate productive learning amongst students who are domiciled in distant locations. Such education system is said to be open because students are not limited by such conditions or factors like age, sex, pregnancy, work, race, religion and so on. It is an education that is open towards an all round human development outside the normal classroom situation. Human development is the process of nurturing human being to experience optimal cognitive, affective and psychomotor development, such that the individual is able to achieve self-actualization within the shortest period of time. The social and economic developments of a country ultimately depend on the quality of human development. It is universally recognized that investment in human development is an essential component of a nation's development plan (Col-ADB, 1999). The issue of human development and its impact on the society is partly a product of effective delivery of distance education in Nigeria. This has necessitated a yawning need for standard Distance Education programme.

History of E-learning in Nigeria Educational System

The development of e-learning in Nigeria could be traced back to the development of telecommunication which began in 1886 when e-cable connections was

established by the colonial masters between Lagos and the colonial office in London to transmit information and receive feedback. By 1893, all government offices in Lagos were provided with telephone service for easy communication, feedback and easy access and later all other parts of the country were provided with telephone services. A lot of changes have been witnessed in the telecommunication industry since 1886. The provision of telecommunication services was initially monopolized by the Nigeria Telecommunication (NITEL) until sometimes in 90's when the federal government of Nigeria commenced the liberalization policy of telecommunication industry (Olaniyi, 2010) by introducing private telephone service providers (Mtel – NITEL, Econet Now Airtel, MTN and Communication Investment Limited (CIL) were initially licensed to provide General System for Mobile Services. Communication Investment Limited license was later withdrawn due to inability to pay the license fee before the prescribed duration which was later given to Globacom Nigeria. With this development, more companies were licensed to provide internet services in Nigeria, and this led to improved access to the internet by Nigerians. The country has less than 11 Internet Service Providers (ISPs) in 2000, but by the year 2006, it has risen to above 100 and many got connected to the information super-highway, through broadband VSAT connection.

In Nigerian schools, the commonest type of e-learning adopted is CD-ROM which can be played as at when the learners desire (Obara & Abulokwe, 2012). The challenge of this method is that the number of students per computer in which these facilities are available are not enough as compared to when lectures are been received in the classroom. Some institutions adopted the use of intranet facilities; however, this is not well maintained because of incessant

power problem and high cost of running generating set. Most students in Nigerian go to the cyber café but because there are people of diverse intension on the net at the same time, and the bandwidth problem, a multimedia interactive becomes a challenge. Despite all these and other challenges facing e-learning in Nigeria educational institution, institutions such as University of Ibadan, ObafemiAwolowo University, University of Benin, University of Abuja, University of Lagos, National Open University of Nigeria developed e-learning for their use. Though, most of the educational institutions (private and public) have started setting up their ICT centres for internet services alone without actually taking into consideration other components of e-learning centre.

E-learning Facilities and its Utilization in Distance Education

Functional and qualitative education, which is viewed as a necessary condition for national development cannot be achieved without sound knowledge and application of e-learning. Thus, educational systems all over the world today are under increasing pressure to use e-learning to teach students the knowledge and skills they need in the 21st century (Ezeugbo & Asiegbu, 2011). Educational institutions, in recognition of the impact of new technologies on the work place and everyday life, are making effort to restructure their educational programmes and classroom facilities and instructional strategies in order to minimize the teaching and learning technology gaps between developed and developing nations. Thus, Ushie, Okworo and Ukpanukpong (2009) stressed that the new work force of teacher educators and student teachers must be capable of locating, accessing, analyzing and synthesizing information to generate new knowledge and products. Furthermore, the main purpose of e-learning is to transform the old methods and approaches of curriculum implementation in order to bring about

certain changes in the behaviour of the learners and the extent to which the changes take place. Obodoegbulam and Ogbonnaya in Ezeugbo and Asiegbu (2011) enumerated e-learning facilities needed for effective teaching to include computer, Internet, e-mail, satellite, multi-media, network, telephone, wireless technology, mobile phone, CD-ROM among others.

Similarly, Steve in Ushie, Okworo and Ukpanukpong (2009) identified the information communication technology applied in instructional delivery to include computers, Internet, electronic mail (email), teleconferencing, worldwide web (www), and satellites. Nwana (2012) also listed ICT resources as computer, scanner, printer, Intranet, Internet, e-mail, videophone systems, teleconferencing devices, wireless application protocols (WAP), radio and microwaves, television and satellites, multimedia computer and multimedia projector. Therefore, teachers play important role in any curriculum implementation, because teachers are the pivot of the teaching profession and the education of any nation cannot grow above the knowledge of its teachers (Osuafor & Emeji, 2015). Ezeugbo and Asiegbu (2011) and Nwana (2012) in their studies explains that poor electricity supply, lack of qualified manpower and among others are constraints towards the successful utilization of e-learning and e-learning facilities for curriculum implementation in schools. In view of this Otuka in Ezeugbo and Asiegbu (2011) expressed that computer literacy in Nigeria is still at its lowest side because e-learning is faced with a lot of challenges some of which include inadequate e-learning facilities, lack of skilled manpower to manage the available resources, inadequate funding of higher education and reluctance/inability on the part of the lecturers to fully integrate new technologies in their pedagogical practices.

Distance Education in Nigeria

Distance Education (DE) is a system of education characterized by physical separation between the teacher and the learner in which instruction is delivered through a variety of media including print and other ICTs to the learner who may either have missed the opportunity earlier in life or have been denied the face-to-face formal education due to socio-economic, career, family and other circumstances. Jegede (2003) defined distance education as education provided by a mode other than the conventional face-to-face method whose goals are similar to and just as noble and practical as those of on-campus full time face-to-face education.

The history of distance education in Nigeria dates back to the correspondence education as a means of preparing candidates for General Certificate in Education, a prerequisite for the London Matriculation Examination. The first indigenous distance learning programme was an English Radio programme of Nigeria Broadcasting Corporation that followed independence in 1960. The programme was primarily targeted at primary and secondary school levels and covered core courses at both levels with more emphasis placed on the teaching and learning of Science, Mathematics and English. The technology driven distance learning came into existence almost the same time with the first indigenous distance learning with the emergence of educational television programmes of the then National Television of Nigeria (NTV) (Nakpodia, 2010).

There was also schools educational broadcast of the radio Nigeria stationed in Lagos and relayed all through the federation. All radio stations were required to hook at specific times of the day during school hours for broadcasting of programmes. In the last 31 years, University education programmes in the country began to witness a lot of changes in terms of instructional delivery mode in some of our tertiary institutions. The

Correspondence and Open Studies Unit (COSU) of University of Lagos that started in 1974, which later changed to Correspondence and Open Studies Institute (COSI) and now known as Distance Learning Institute was the first attempt made to establish a distance education unit as part of a University in Nigeria. It began initially to offer programmes in science education at first degree level in Biology, Chemistry, Mathematics, Physics and Postgraduate Diploma in Education (PGDE) for degree holders that did not possess teaching qualifications. The National Teachers' Institute (NTI) started as a distance education institution in 1976 (as the first dedicated distance education institution) with the support of UNESCO (Obioha & Nndi, 2011). It began by training grade II teachers (TC II).

In 1990, the Nigerian Certificate in Education (NCE) programme was introduced when the expectation was that the minimum teaching certificate in Nigeria was expected to be NCE. The Institute also introduced the PGDE programme in the year 2005. Ahmadu Bello University (ABU) also started its distance education through a training programme known as Teachers-in-Service Education Programme (TISEP) for Grades Three and Two teachers and later the Nigerian Certificate in Education (NCE). Also, in November 1972, the University also established a University of the Air Programme for teachers in secondary schools and teacher training colleges. The Distance Learning Institute of the University of Ibadan which started in 1979 as external degree programme of the university is another institution which adopted the distance learning mode.

The National Open University of Nigeria (NOUN) established in July, 1983, by an Act of the National Assembly as the first distance learning tertiary institution in Nigeria when it became crystal clear to the

then federal government that the ever growing demand for education by her people cannot be met by the traditional means of face-to-face classroom instructional delivery. The institution was closed down few weeks after its establishment and the Act that established the University was suspended in 1984 by the then Federal Military Government that overthrew the civilian government. Many years after the closure, the compelling reasons that informed the earlier establishment of the university as well as the need to fill the gap created by the federal government clamped down on mushroom outreach study centres of many conventional universities all over the country and the need to take advantage of emerging developments in the field of ICT which has revolutionized the techniques and methods of instructional deliveries in the distance learning mode necessitated the reactivation of the suspended NOUN Act of 1983 in 2002. This paved the way for the resuscitation of the NOUN (Besse, 2004).

E-learning Facilities

As economic recession continues schools and teachers are diverting to web-based services to help educate their students. Whether it's through open resource projects or virtual classrooms, teachers are finding innovative resources to engage their students. Hence, there are quite number of e-learning platforms that could be utilized in Distance Education in Nigeria setting:

- **Scitable:** Geared towards advanced high school and college science students, Nature Education launched Scitable to provide free online access to more than 180 overviews of key scientific and genetics concepts. The tool consists of a 220-article content library (often cited from members of the Nature Publishing group, more than 200 virtual classrooms set up by teachers across the globe, and a mentor network of experts poised to

answer student questions. Educators and students can upload their own content for exploration and discussion, while the content library provides a number of articles accepted as valid sources at the university level (Chou, 2010).

- **Edutopia:** The George Lucas Educational Foundation launched Edutopia in the hopes of creating educational best practices for multimedia in the classroom. The site includes online polls, curated blogs, assessment tools and a dedicated magazine for educators at the K-12 levels.
- **LearnHub:** LearnHub is a network where members can create their own communities, share lessons, chat, create tests and tutor each other online at no cost. Schools create their own virtual classrooms where students complete assignments, play games and share photos and text. One of the great features of this site is that the site's report generator allows teachers to track users' progress. While the content is not as in-depth as Scitable's, this is a good site for standardized test preparation and basic K-12 education exercises (Chou, 2010).
- **Moodle:** Moodle is a free open-source course management platform designed to help teachers create better online resources. Now in addition to providing lesson plan, assignment and quiz-making tools for teachers, schools also gain access to Outlook Live for e-mail, Office Live Workspace for document sharing, Windows Messenger for chat and Windows Live SkyDrive for 25 GB of storage. This tool is slightly more advanced than some of the others in

the industry, but it does offer a number of scalable solutions.

- **Edmodo:** Edmodo is a private micro-blogging service for schools that allows teachers to edit privacy options within their virtual classrooms. Educators generate a join code and students log-in to chat, link to files, share notes and check their collective calendars for upcoming exams, quizzes and Pro-D days (Chou, 2010).
- **ESL Video:** ESL Video allows language educators to create quizzes from virtually any video on the internet. From here they can embed their quizzes into their classroom sites or redirect students to the ESL Video domain. Teachers tailor their video quizzes to specific learning units or create simple vocabulary quizzes. While this tool may not be as sophisticated as some of the above services, its merit comes from the fact that teachers can incorporate pop culture products into their lesson plans with very little effort to ignite a love of teach (Chou, 2010).

Advantages of E-learning to Distance Education

Distance education in Nigeria is an important issue for several cogent reasons. Firstly, the vast majority of the population lives below poverty level. They are unable to attend urban based institutions and thus remain deprived of higher education despite their superior merit. Secondly, those who joined workforce without completing their studies or education due to family commitments are unable to combine their work with studies and very few of them who have strong desire for higher studies could not do so because of the limited offer in the traditional institution of higher learning. Thirdly, the tradition of childhood, early marriage and religious belief in the country

deprives the majority of female population from higher education (Boroffice & Akinyide, 2005).

Besides, there are some other usual factors like physical disabilities, remoteness of localities, exorbitant tuition fees in most privately owned Universities and so on. These are some of the major issues responsible for why millions of Nigerians are deprived of higher education despite their interest and eligibilities. Distance education now provides avenues for higher education for such a vast under-privileged population by using e-learning facilities to reach out to this populace. Nigeria is generously endowed with human resources that need to be well equipped with literacy and skills to contribute to economic development, which is badly needed for this country. Thus, it is crystal clear that the way forward is to embrace distance education using both hands and supported by all necessary financial and infrastructural commitments.

According to Adu, Eze, Salako, and Nyangechi (2013), e-learning has several advantages in promoting the activities of distance learning institution. Some of the important points are listed as follows:

- students will learn what they need to learn and go at their own pace;
- the internet will provide students with the opportunity to make choices about the type and direction of their learning and gain feedback quickly and efficiently. This has the potential to cater for individual learning and styles and requirement providing information about a topic of personal interest.
- The courses provided in this model will have wide variety of courses based on IT and non-IT topics, which is an additional benefit to attract large number of learners from all the background.

- provide students courses round the clock i.e. 7 days a week and 24 hours a day, which further attracts working class, students and individuals.
- Computers with high internet infrastructure will help management to reduce the overheads cost as there won't be any recruitment, training and up gradation of faculties
- enable students to discover how the information they gain fits into the real life.
- provide students a culturally, racially, physically and gender anonymous medium for communication. Social behaviours can be reduced as students realized that they are judged solely on what they say and how they say it.

Impact of E-learning in Achieving Students and Teachers Role in Distance Education

For e-learning to significantly affect education in developing countries like Nigeria, students and teacher role in distance education needs to be established. Nevertheless, some direct and indirect outcomes can be discerned. According to Olson and Codde (2011), impacts of e-learning on students, teaching, economy and society are:

Student achievement is complex and mediated by a range of other factors affecting achievement. It is clear, however, that: their effectiveness is closely related to how the technology is used as an educational tool; teachers report that tutorials in subjects such as math and science significantly improve student performance; and providing technology on its own has little impact on achievement. In addition, the effect of e-learning on teachers and teaching parallels that of students. It includes: pedagogy often shifts from a teacher - centered classroom environment to a more learner - centered environment, allowing more effective use of technologies; teachers report that they gain

confidence, self-esteem and renewed motivation in e-learning environments; and there are significant barriers to teachers in developing countries that need to be overcome including their lack of ICT skills and ICT-related pedagogical skills.

The economic impact of e-learning can be examined by first, identifying the impact of e-learning and improvements in education and second, the effect of a high tech workforce on the national economy. Finally, impact on society of e-learning programs is similarly difficult to separate from the multitude of other factors affecting society. The "digital divide" between those people and countries with access to digital technologies and those without, is narrowing as information and communications technologies become increasingly available and less expensive. African countries are catching up fast, but from a lower base than other developing countries. Some of the widest digital divides are within countries: between rural and urban centers, and between rich and poor communities. This is unfortunately parallel to statistics of student enrollment in secondary schools. e-Learning has the potential to address this gap by bringing quality education to rural and other underserved schools, but poor infrastructure and other challenges are greater in those areas than in the better served urban areas, and experience to date is that these areas are underserved with e-learning as well. E-Learning programs that overcome these challenges thus have the potential to have large impacts on learning (Obara & Abulokwe, 2012).

E-Learning technologies could potentially play an important role in reducing the gap in access to education and in achievement by girls and other underserved communities in developing countries. Currently, the gap in access to education of girls and underserved students is mirrored by a gap of them using the Internet and other

ICT technologies, partly due to societal norms and partly due to their economic situation. Introducing e-learning technologies into schools can assist girl and other underserved students improve their ability to participate and thrive in schools. Governments and international organizations are designing e-learning programs to deliberately address the gender gap. The potential transformative role of e-learning to develop 21st century skills in many countries may require, thus, integrating e-learning into the system from curriculum development to teacher professional development.

Therefore, realizing the potential of education as an instrument for modernization of their economy, African countries invested heavily in expanding their educational systems after achieving political independence. Distance education lends itself to technological and scientific advancements and meets the diverse human and social needs. It incorporates into its basic correspondence teaching methods, educational broadcasting, audio-visual aids, and recently telecommunication and computer based technologies. Information and Communication Technologies (ICT) have become key tools and had a revolutionary impact in our country and the world, as well as on how we live (Adesanya, Idogwu & Otedola, 2015).

Also, advances in ICT have revolutionized higher education in many ways; for example, increasing access to instruction, improving the availability of educational resources, facilitating meaningful interaction among learners, etc. 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 (Liverpool, Marut, Ndam, & Oti, 2015). Today, technology enhanced learning, including distance and online instruction, is recognized 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 (Liverpool, Marut, Ndam & Oti, 2015).

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. While there is much to be learned from the experiences of others, it's critical that Nigerian Higher Education Institutions work together toward building models to address specific challenges unique to the Nigerian situation (Liverpool, Marut, Ndam & Oti, 2015). Finally, new technologies and techniques engendered by information and communication revolution now allow for producing and saucing of knowledge and impacting of skills. The new technologies allow educational instructors to move into the role of guiding and assisting students to gain the skill required to acquire and utilize knowledge available in various forms all over the world.

Conclusion

The survival of tertiary education institutions in the 21st century will increasingly rely on various forms of

electronic delivery of instructions within and outside the school setting. E-learning is now widely used in most of the developed countries to promote distance education (DE) and life-long learning in an effective way. In Nigeria, the recent developments and awareness of the Government on ICT have opened an opportunity to adopt e-learning as instructional delivery mode in distance education programmes. Considering the recent expansion of ICTs in Nigeria, National Open University of Nigeria have introduced some modern ICT like e-mail, web-based learning, blog, (e.g. open course wares), CD-ROM for learners.

Recommendations

1. The university should liaise with private organizations to provide affordable electronic devices for students and lecturers. These electronic devices do not necessarily have to be laptops that are expensive but other electronic devices that could store, copy,

- display, record information such as MP5, WAP enabled phones, PDAs.
2. Orientation should also be given to students on how to use these devices to promote learning.
3. Government should establish Distance Education Centre in all Universities in Nigeria to promote distance learning.
4. The government should establish more tele-conferencing centres for the operation of the Distance Education in Nigeria
5. The school should develop online courseware and lecture delivery modules for Distance Education operations in Nigeria.
6. Schools should collaborate with ICT professionals for the development of courseware
7. Lecturers should be well trained in specific methods in which they could use electronic devices to enhance teaching.

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