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A Theoretical Framework for Enhancing Open Distance Learning (ODL) Education

Mughele, E.S., Konyeha, S. & Onwodi, G.O.
Department of Computer Science, Delta State School of Marine Technology Burutu. Nigeria
Department of Computer Science, University of Benin, Benin City, Nigeria
Department of Computer Science, National Open University of Nigeria, Abuja, Nigeria
E-mails: prettysophy99@gmail.com; susan.konyeha@Uniben.edu; gonwodi@noun.edu.ng

ABSTRACT

In a way education can be thought of as a communication process among the participants. This paper focuses on how ICT impacts and enhances open distance Learning (ODL) education, technologies that mediate the teaching and learning taking place at a distance. The philosophy of this paper is divided into four sections; The role of ICT in improving open distance learning, the prospects of deploying ICT infrastructure for enhancing learning, knowledge and educational empowerment and the challenges of the deployment, cost and accessibility of ICT tools for open distance learning. The research concludes by emphasizing the importance of Knowledge, innovation and Information and Communication Technologies (ICTs) and its effects on nation building.

Keywords: Open Distance Learning (ODL), E-Learning, Distance Education, ICT

1. INTRODUCTION

Basically, Education is essential for human resource development and for national development in general (Sanubi and Akpotu, 2015). However, in most of the developing countries, due to the limitation of resources, it is almost impossible to educate all citizens through on campus teaching (Kamal *et. al.,* 2001) especially in developing nation in the Africa region. Under these circumstances for developing countries to educate their entire population can be demanding and quite expensive. Majority of the population are increasingly depending on Open Learning and Distance Education systems which is relatively cheap when compared to the on campus educational system of learning. The deployment of modern technology in Educational system is the key to an increased prospect for learning which shape learners critical and analytic competencies with respect to disciplinary knowledge. Distance education (DE) is a system of learning driven by computer linked to internet. The flexible nature of DE avail students who are unable to attend full time education due to age, social or religious barriers. The relevance and the use of the Information and Communication Technology (ICT) for Learners increase support and the services available for students in Open Distance Learning (ODL).

In recent times the stakeholders as well as Learners of Open Distance education system are embracing positively and quickly the revolution of ICT for effective teaching and learning infrastructure. The need to enhance ODL education through ICT tools is anchored on some reasons such as the need to reduce the cost of imparting education, to introduce need based educational programmes to eradicate illiteracy for a large number of people and to reduce time required for sanctioning new programmes by adopting new flexible nature of administration (Baruah and Handique, 2009).

ICT is a major factor in shaping the new global economy and producing rapid changes in society. Within the past decade, the new ICT tools have fundamentally changed the way people communicate and do business. They have produced significant transformations in industry, agriculture, medicine, business, engineering and other fields. They also have the potential to transform the nature of education where and how learning takes place, and the roles of students and teachers in the learning process. Distance education (DE) has always been known for its departure from the conditions in which teaching and learning "naturally" take place. Distance education is anchored on computer mediated technology to develop learner's sense of purpose and general utilization of technological devices, which help shapes critical and analytical competencies with respect to disciplinary knowledge.

2. RELATED LITERATURE

2.1 What is Open Distance Learning (ODL)?

Distance education has been a familiar concept for quite some time, in recent times it has evolved in several ways. The definition for Open learning varies from one country to another and it has evolved in most recent times. Distance education refers to a mode of learning in which student and instructors are mostly situated at different locations and learn at their own pace and time (Bates, 2005). Nkingwa (2013), observed that Distance educationis a form of education which is offered through some forms of communication media and technology such as broadcasting, telecasting, printed materials, seminars, contact programs or a combination of any two or more of such means. There is therefore need for effective communication between the sender and the receiver at every time communication is initiated in an Open Distance Learning education system. Effective communication can be seen as is a process through which the sender conveys a message that the receiver readily receives and understands. It is a two-way process instead of one-way process.

The combination of distance education (i.e. the ability to study from the distance) and open learning (i.e. the ability for anyone to access the educational offer) is often referred as Open and Distance Learning (ODL). Open and Distance Learning (ODL) is a general term for the use of telecommunication to provide or enhance learning. Everywhere around the world, the academic community is discovering and exploring the use of Internet for teleconferencing, and related means to achieve an extended classroom or learning experience. Students in Russia are earning degrees from a university in Australia. Primary and secondary-grade students are exchanging e-mail across continents as a supplement to their formal studies. Students and teachers at all levels are taking part in teleconferences and forming associations that would have been unlikely five years ago. A number of world conferences have been held on ODL and many experimental projects are underway.

ODL entails open learning distance education; this is flexible learning that carried out via on-line and e-learning. ODL education entails the policies and practices that allow entry of students to learning considering vital issues such as the age, gender, or time constraints and with recognition of prior learning. These issues should form the policies that are supposed to be part of a distance education system but are complementary to it. Distance education is the process where learning and teaching is delivered who are separated specifically by time and space from those who are teaching or training.

The teaching is done with a variety of "mediating processes" used to transmit content. Distance education requires flexible learning, which involves the provision of learning opportunities that can be accessed at any place and time. Flexible learning relates more to the scheduling of activities than to any particular delivery mode.

3. THE CONCEPT OF E-LEARNINGAND ODL

E-learning can be referred to as the design, development and delivery of instructional materials by electronic devices, such as computers, mobile, CDs and DVDs (Daniel and Mackintosh, 2009). In e-learning interaction between the learner, the instructor and the learning content is via the use of information and communication technologies (ICT). Implementing e-learning in open and distance learning (ODL) is imperative as shapes the study environment according to the learner needs (Guri-Rosenbilt, 2005). E-learning supports both the traditional and the open and distance higher education mode of delivery, this era of globalization knowledge has no boundary. The transmission of knowledge from one end to another end of the world which in the past was difficult has been made simple with the use of internet. The Internet, through e-learning has potential to change educational delivery from teacher centred to learner centred and thus seem to be one of the best support system in distance learning. Distance learners are characterized by being separated in time and space between the instructor and the learner (Guri-Rosenbilt, 2005). A well-established e-learning platform with barrier free to the learner will contribute immensely toward distance learner's achievement.

In this 21st century amid the era of globalization knowledge sharing has no boundary, because of the available media of knowledge transmission from one location to another. One of the viable medium of transference is the Internet. The internet, through e-learning has potential to change educational delivery from teacher centered to learner centered and thus seem to be one of the best support system in distance learning system. Open Distance Learning (ODL) is considered nowadays as the most viable means for broadening educational access while improving the quality of education. It's been evolved in parallel with the arrival of newer and intelligent communication technologies and advocating peer-to-peer collaboration and giving the learners a greater sense of autonomy and responsibility (Calvert, 2006). Finally, On-line and *e-learning* are terms that have emerged to describe the application of information and communication technologies (ICTs) to enhance distance education, implement open learning policies, make learning activities more flexible and enable those learning activities to be distributed among many learning venues (Farrell, 2003).

Thus the available types of technologies used in open and distance learning are divided into two groups: synchronous learning and asynchronous learning through the use of the Internet (Holmberg, and Börje, 2005). Igwe (2012), noted that ODL started with correspondence mode, but it has improved greatly, deploying four notable stages namely multimedia model, tele-learning model, flexible learning model and interactive flexible learning model. Synchronous teaching and learning technologies a mode of delivery where all the participants are "present" at the same time. It resembles traditional classroom teaching methods despite the participants being located remotely. A time table is required to be developed and the medium for teaching and learning are; Web conferencing, videoconferencing, educational television, Instructional television are examples of synchronous technology, as are direct broadcast satellite (DBS), internet radio, live streaming, telephone, and web based (Igwe, 2012).

The asynchronous learning mode of delivery is where participants access course materials on their own schedule and is usually more flexible. Students are not required to be together at the same time. Mail correspondence, which is the oldest form of distance education, is an asynchronous delivery technology and others include message board forums, e-mail, video and audio recordings, print materials, voicemail and fax (Igwe,2012). The two methods can be combined in the delivery of one course or even program.

Burns, (2006) notes that many courses offered by open universities. Some ODL institutions use periodic sessions of residential or day teaching to supplement the remote teaching. These institutions may use a blend of technologies and a blend of learning modalities (face-to-face, distance and hybrid) all under the rubric of "distance learning,"(Holmberg, and Börje, 2005). Other technological methods used in the delivery of distance education include interactive radio instruction (IRI), interactive audio instruction (IAI), online three-dimensional (3D) virtual worlds, immersive environments, digital games, webinars, web casts etc. A popular 3D virtual world has the involvement and interaction of learners and teachers and among learners themselves, puts in use the synchronous and asynchronous technology in learning (Oblinger, 2000).

3.2 Synchronous Communication

There are different modern methods of communication such as the telephone communication, the sound-conference via connected computers (audio teleconferencing), video-conference via connected computers (tele conferencing), the conference with the use of “whiteboard” and the use of applications of chat-room type (supported in-text).

3.2 Asynchronous Communication

Some modern methods for asynchronous communication consist of the following;

Fax, Computer software (educational CD-ROM), Video films, Audio tapes, Compressed video, the courses supported by the World Wide Web, the bulletin boards in the World Wide Web, and the electronic post (e-mail). From the above methods of communication the video conference is very interesting (Kies et al, 1997). With it, two or more parts, including technology, can be connected with sound and vision in real time. The transport of sound and picture is achieved with the transmission – reception of signal of compressed video-sound (streaming video-audio), with the help of suitable software.

4. THE ROLE OF ICT IN ODL

ICT Stands for "Information and Communication Technologies." ICT refers to technologies that provide access to information through telecommunication It is similar to Information Technology (IT), but focuses primarily on communication technologies. This includes the Internet, wireless networks, cell phones, and other communication mediums. Modern information and communication technologies have created a "global village," in which people can communicate with others across the world as if they were living next door. For this reason, ICT is often studied in the context of how modern communication technologies affect society. Distance education is a field of education that focuses on pedagogy/Andragogy, technology and incorporated in delivering education to students who are not physically “on site” to receive their education. Instead, teachers and students may communicate asynchronously by exchanging printed or electronic media, or through technology that allows them to communicate in real time. Elahi, (2012) further points that distance education courses that require a physical on-site presence for any reason including the taking of examinations is considered to be a hybrid or blended course or program.

The real impact of e-learning on the quality of open distance education is difficult to measure. E-learning largely embodies two factors: improving education through improved learning and teaching facilities, and inventing and sharing new pedagogical techniques or ways of learning, thanks to ICTs. The quality of education (with or without e-learning) is very difficult to measure, because learning depends on some factors which depends on the students’ motivation, abilities, and other conditions, i.e. family, social, economic, health backgrounds, etc., as much as on the quality of teaching.

The reasons that explain ICTs' positive impact on quality of e-learning is its ability to offer more flexibility of access to open distance learners, better facilities and resources for studying, and new opportunities for learning thanks to the relaxation of space and time constraints. Its success does not correspond to a significant change in class pedagogy, but to a change in the overall learning experience. According to (OECD, 2005), the main drivers or components of this positive impact come from:

i. facilitated access to international faculty/peers, i.e. the possibility of online lectures or joint classes with remote students;
ii. flexible access to materials and other resources, allowing students to revise a particular aspect of a class, giving more access flexibility to part-time students, or giving remote and easy access to the library materials;
iii. Improved communication between faculty and students and increase of peer learning; these "positive impacts" on the overall learning experiences of the learners is alone, a significant achievement of e-learning, even though it has not radically transformed the learning and teaching processes.

5. THE PROSPECT OF ICT ON ODL

The emergence of ICTs represents high promises for the tertiary education sector and, more broadly, the post-secondary education sector if one takes into account their impact on non-formal education. ICT plays a role on three fundamental aspects of education policy: access, quality, and cost. ICTs could possibly advance knowledge by expanding and widening access to education, by improving the quality of education, and reducing its cost. All this would build more capacity for the advancement of knowledge economies. This paper focuses on the role of ICT on ODL and its impact on knowledge expansion in the economy, success rates and the challenges involved in full integration of ICT on ODL.

The integration of ICT learning infrastructures on ODL has gradually phased out the traditional correspondence-based distance education by enabling the rise of a continuum of practices between fully campus-based education and fully distance education through various e-learning infrastructures. More specifically, fully online learning can allow large numbers of students to access education on the platform of e-learning mediated through ODL. The constraints of the face-to-face learning experience, that is, the size of the rooms and buildings and the student/teacher ratios, represents another form of relaxation of space constraints (Igwe, 2012).

ICTs indeed allow a very cheap cost of reproduction and communication of a lesson, via different means like the digital recording and its (ulterior or simultaneous) diffusion on TV, radio or the Internet. The learning process or content can also be codified, and at least some parts be standardized in learning objects, for example a multimedia software, that can in principle be used by millions of learners, either in a synchronous or asynchronous way. Although both forms might induce some loss in terms of teacher-learner interactivity compared to face-to-face teaching, they can reach a scale of participation that would be unfeasible via face-to-face learning.

Passerini and Granger (2000), Considered the promises that e-learning promised to offer ODL education via the use of the internet. E-learning holds promises for incremental improvement, including an increased access and quality of the learning experience, an improvement whose importance should not be underestimated. As for radical innovation, the answer is, not yet. So far, e-learning has induced a quiet rather than a radical revolution of open distance education particularly in Nigeria. The National Open University of Nigeria (NOUN) is the first fully fledged University that operates in an exclusively open and distance learning (ODL) mode of education in Nigeria. The University focuses mainly on a distance teaching and learning system, and delivers its course materials via print in conjunction with ICT formats. NOUN currently has thirty study centres, which are stratified into the six geopolitical zones of the nation.

The registered active student population of the National Open University of Nigeria, NOUN, has hit 254,000, its vice-chancellor, Abdalla Adamu, disclosed (Premium Times, 2018). This figure is the reason to conclude that ODL mode of education holds a great prospect as it increases capacity in the educational sector. Information Support Systems (ISS) as an ICT tool comprised of search engines which enhances student's easy information retrieval. The availability of Information support system provides the services needed for successful learning environment, which provides adequate information about the program and its outcomes to enable realistic choices by students, robust administrative and technical systems, clear academic expectations and guidance (Kuiper, Volman, and Terwel, 2005). Information support system involves the provision of services and support mechanisms that enhances distance learners/educators on the quality of their research; improve retention and achievement (Brown et al., 2003). Information Support system has a wide range of activities and equipment including all the tools, applications and information, which are available and accessible through computers. It encompasses various forms of information delivery systems such as televisions, radios, newspapers, computers and the internet (Okwudishu, 2004). The influence of ISS through web based medium of communication has contributed to the development of social presence among the distance learning group (Kehrwald, 2008).

6. THE CHALLENGES OF INTEGRATING ICT ON ODL EDUCATION

ICT resources has benefited ODL education immensely, as explained in the previous section, irrespective of the numerous prospects ICT holds for ODL education in the developing nations of Africa; there are also several challenges. Its greatest challenge is power generation and high cost of access to ICT facility by both students and staff, other constrains are inadequate human resources, attitudinal factors (student's behaviour towards e-learning in ODL educational system) and inadequate financial resources.

7. EFFECTIVE E-LEARNING INNOVATIONS IN ODL

There is need to identify and reflect on some of the key issues to put in consideration in a systematic way for e-learning to develop further and become a deeper driver of innovation in tertiary education. In general, and in particular in ODL, if the vast majority of colleges and universities whether in close or open distance learning platforms are to embrace e-learning, a sustainable innovation and investment model must be developed. The first challenge lies indeed in the development of sustainable e-learning innovation models which go beyond using e-learning as an add-on to traditional forms of teaching and learning in tertiary education. There is a need to invent new, useful and better pedagogic innovations that may partly substitute for traditional face-to-face teaching. This requires a broad willingness of these institutions to search for new combinations of input of faculty, facilities, and technology and new ways of organizing their teaching activities.

Secondly, the challenge lies in the development of a realistic model for investment in e-learning that would stimulate the participation of faculty and other stakeholders and be financially sustainable. This requires more straightforward, systematic knowledge on the real costs and benefits of e-learning investments in tertiary education. However, like ICT investments in other sectors, the cost-effectiveness of e-learning investments will depend on whether new organizational and knowledge management practices are adopted. In overcoming some of the challenges encounter in ODL education with respect to accessing study materials research via ICT tools. OECD, (2004b); Cunningham et al., (2000) opines that different organizations, such as traditional colleges and Universities, virtual Universities, libraries, for-profit ICTs and training companies from different sectors can collaborate. This collaboration ranges from sharing material, joint technology and software development, joint research and development, joint marketing, joint training, connectivity and may be regional, national, and/or international.

Aralu and Airen (2014) noted that unnecessary delays are caused in terms of information dissemination as a result of absence of adequate facilities. He also narrated challenges encountered using internet with communication technology to facilitate communication with students. Some of these challenges cited includes; High bandwidth costs, limited access to the Internet and technology as majority of the students, especially those in commuting from home/outside the state or in rural areas, do not have access to ICT facilities. High illiteracy rates which influence student's ability to use these facilities when available. Resistance to organizational change as organizations should change the way they provide services and do their work, the need for student to adapt. However, in most cases, Staff resists changes, and stick to old traditional methods, which makes the implementation of ICT as tools very difficult. Computer literacy is also a factor as many organizations have computer systems in offices, but they are not used by staff due to their inability to use them. Lack of knowledge and information management competencies, there is very little that a person can do without knowledge (or know-how). Knowledge is power, and a staff member with little or no knowledge (of ICT) will never perform well like someone who knows all about ICT.

8. SUMMARY AND CONCLUSION

So far, e-learning has grown at a rapid pace and has enhanced the overall learning and teaching experience in developed countries with less use demonstrated in developing countries, like Nigeria, Kenya, Zambia and other African countries, due to high cost of power generation and access to ICT facilities. While e-learning has not lived up to its most ambitious promises to stem radical innovations in the pedagogic and organizational models of the tertiary education and especially ODL. It has quietly enhanced and improved the traditional learning processes. Most institutions, especially in developing countries like Nigeria, are still in the early phase of e-learning adoption, characterized by important enhancements of the learning process but no radical change in learning and teaching.

It is also important to note from the philosophy of this article, that ODL via ICTs tools has enhanced sustainable development, by improving literacy level in Nigeria and other Developing countries in Africa. Through ODL educational system most adult who were not privileged to attend class room education due to financial constraints and other socio-economic factors are now opportune to acquire knowledge as working class adults. Most primary school teachers were also able to further their educational level through ODL education. The operations of ODL educational system available across Nigeria and other African countries has reduce illiteracy level in Nigeria and Africa at large. Igwe D. (2012), observed that ICTs can be used through e-education to spread quality education and pedagogy. A balanced blend of technology and content offers a window of opportunity to the learners in the rural schools to bridge the digital divide. The e-learning system is a comprehensive and well thought-out initiative to open new vistas of learning and to provide a level playing field to schools' students in rural areas and isolated towns. This highlights the need to bridge the diverse proliferation of education across different socio-economic and geographic segments of the country.

The way forward therefore is to take advantage of every e-learning resources, in order to make teaching and learning in tertiary and Open Distance Learning education flexible, interactive and eliminate the challenges in accessing educational materials. The ICTs programs developed impact when and where students learn. In the past, educational institutions provided little choice for students in terms of the method and manner in which programs were delivered. Students typically were forced to accept what was delivered and institutions tended to be quite traditional in terms of the delivery of their programs. Learning through e-education is now creating competitive edges through the choices they are offering to the students. These choices extend from when students can choose to learn, to how and where they learn. This enhances flexibility, quality knowledge sharing and students determining when, how, where to learn in Open Distance Learning.

9. Area for further study

This paper only deployed literature review research method; further research can be conducted in the following area.

1) Other study can be conducted statistically to determine the level at which ODL via e-learning has enhances literacy level.
2) Studies can also be conducted to determine the level of collaboration between governmental and non-governmental institutions with ODL education in Nigeria

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