## Information and Communication Technology and Open Distance Learning, Impact and Challenges

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## Abstract

*As the world changes every day, so is the education sector. The introduction of Information and Communication Technology (ICT) paradigm  into the education sector as it is in various other sectors is one of the good things that has happened to the education sector since the beginning of this millennium. Although the impact is noticeable in both conventional and none-conventional mode of education, it is more pronounced in the activities of the latter than the former because it is the pillar on which the operations of Open Distance Learning hinges. This paper would through the concept of the relationship that relates ICT and open distance learning together, discuss the role of ICT in open distance learning, look into the problems encumbering the development expected in the relationship between ICT and distance learning and profound solutions. This is with a view to better position the operation of open and distance learning within the Nigeria environment. This will allow ODL to serve learners better, help many adults to achieve their aim of acquiring education and also enable the workers who are learners to acquire adequate knowledge that are required for better performance at their various workplaces. It will also be beneficial to the employers of labour as the competence of their staff will be guaranteed with regular seminars, conferences and workshops.*

**Keywords:**    *ICT, open and distance learning, impact and challenges.*

## Introduction

The latest technique of creating and disseminating information using digital technology is the transformation the world is experiencing since the beginning of this millennium and it is what is being referred to as Information and Communication Technologies (ICTs). These are modern tools (cable satellite, the internet telemetric applications) that facilitate the circulation of ideas and bring people together. ICT according to Tinio (n.d.) is defined as a diverse set of technological tool and sources used to create, disseminate, store and manage information. It is a technology that manipulates and process information and at the same time facilitates communication among people. The ICT can be used to promote social development and also facilitates teaching-learning process as it affects the open distance learning.

The open and distance learning uses a variety of resource and technologies since  it is  web based, thereby making ICT most relevant and useful .In the same light, Berge & Collins (1995) asserts that physical and social immediate instructional contexts are

transformed in distance learning, through the technological intermediate communication between teacher and learners. Thus, open and distance learning has gained credibility as a result of its cost effectiveness and geographical coverage due to its enormous usage of web-based method of delivery.

## The Concept of Information and Communication Technology in Open Distance Learning

The concept of Information and Communication Technology refers to all kinds of electronic systems that are used for broadcasting, tele-communication and other forms of computer mediated communication. It includes all ICT centered on-line self-learning packages, interactive CDs, chips, satellites, radio, optical fiber technology, tele-presence systems and all types of information technology (IT), hardware and software. However it is important to point out the fact that the most commonly used at present are the computer based internet broadcasting technologies (radio and television) and telephony , although they have been in use over time and have richer history of use as instructional tools.? Support this statement with reference!!!

The Open University of United Kingdom (UKOU) which was the first educational institution in the world in 1969 dedicated open and distance learning and Indira Gandhi Open University in India used print, recorded audio and video, broadcast radio and television and in recent years audio conferencing technologies, (internet) to advance the cause of ODL. This is also evidenced in the operations of The National Open University of Nigeria as it uses prints and on-line materials to facilitate learning.

## The Impact of ICT on Open Distance Learning

The computer as an example of ICT, is a million instructors in one. It teaches so many lessons at the same time, makes information to be available on various field of learning including the dictionary meaning and pronunciations. The use of ICT has made the traditional world of paper obsolete. Traditional library involves the use of millions of books and shelves, which occupy space. In some areas, the shelves are filled with out-dated books. The introduction of on-line electronic libraries and CDs by ICT is a great improvement on information, organization and retrieval in libraries. Learners access different landscapes, museums, libraries and any other places on the screen while staying in a place with the effective use of interactive CDs.

ICT is an instrument that enhances learning process, both the learner and the instructor make use of the instrument and benefit from it. As observed by Okenimkpe (2003), an instrument is an aid if, without it, a tutorial function could still be performed (although perhaps less effectively, so that the instrument lends support to the tutorial function and its truly an enhancer of effect), and a method if without an instrument, a particular tutorial function cannot be undertaken (in which case the instrument is the sole prop and means of the tutorial procedure).

Britain according to Gell and Cochrane (1996), presents comprehensive overview of how she makes use of ICT to promote distance learning. In the 1960s as reported by them, the Open University in United Kingdom (UK) started offering courses through the use of television and in 1994, they opened a summer school over the internet. Also in Britain through the use of Integrated Service Digital Network (ISDN), learners obtained masters degree via interactive lectures. In 1995, the first virtual university was opened in Britain and this enables learners in different locations to learn through the use of ISDN. The virtual university system makes it possible for learners to improve on their academic qualification without unnecessary hardship. Learners' registration, learning and evaluation are done via ISDN.

These universities give learners opportunity to learn from experts recruited from all over the world. A learner is not compelled to learn at a particular time since whatever the instructor does is not recorded on a student's computer. From the virtual electronic classroom, learners access interactive databases around the clock. On-line postgraduate degree courses are offered by the Stanford University in Califonia since 1995.

Distance learning covers the various forms of study at all levels without the learners being under the continuous and immediate supervision of instructors. In spite of this, they benefits from planning, guidance and tuition of a tutorial organization (Egunyomi and Aderinoye in Okedara, Anyanwu and Omole, 2001). They observed that learner and the instructor can be separated in distance learning and that with the use of ICT the gap between the two can be bridged.

Supporting this assertion, Aderinoye (2002) used the insertions in the Nigerian blue-print on Nomadic Education of 1987, to observe the situation surrounding the education of the nomad vis-à-vis the relevance of ICT. He remarked through his observation that "the nomads are in different stages of settling down; no one school system is deemed sufficient in providing them with meaningful education at the present stage. For a effective education to take place, a multi approach school system and resource development will therefore need to be adopted. These will include: radio/distance education, and telecast for the settled Fulanis who possess television sets". This challenge can only be met with the use of ICT, it is the best aid to reach the scattered and rural areas, groups traditionally excluded from education due to cultural, social or economic reasons. Others who could benefit from this might also include those who for cost and time-constraint were unable to have formal education; that is, the out-of-school and the disadvantaged group.

With this move and development in the education sector, the 21st century illiterates will not be those who cannot read and write, but those who cannot learn. Global changes have put pressure on all groups to constantly acquire knowledge in order to be able to apply new skills. This underscore the fact that the world generally is not discussing literacy again but literacies; as this affects every individuals because no one can be literate in every areas of life. The adult learner is now unlike before, time and location bound and

ICT has the ability to transcend time and space, as it can be accessed anywhere and anytime. Electronic media such as fax, television, radio, internet, cassette tapes, video tapes, computer, phone according to Imogie  (2004) which are very germane in the dispense of education through ODL play the following roles in respect of teaching-learning environment.

- Awakening learners' interest by their ability to arouse their curiosity to know more.
- They supply necessary basis for developmental learning and hence make learning more permanent.
- They offer a reality of experience, which stimulates self-activity on the part of learners
- Individualizing education and therefore if properly applied, opening diversified ways through which individual learning needs are met.

The points raised above shows that the quality of education is improved through ICT as it increases learner motivation and engagement through facilitation of basic skills while it enhances instructors training. Adult learners are motivated through the use of resource materials like video, multi-media computer, software etc, which will provide challenging contents that will engage the learner in the learning process. Access to programs and courses in the internet helps to improve and widen knowledge and skills of instructors. Also, Interaction and cooperation among learners, instructors and experts is encouraged by ICT-support learning as it also encourages working with people from different cultures, enhance communication skills and global awareness.

Computer-Assisted learning is a very valuable tool for guided self-study because it can easily be manipulated to adjust to individual skill and behavior than lectures or textbooks. Clark (2001) remarked that it promotes lifelong learning behavior. With ICT, learners are be able to simultaneously undertake work from several institutions in different parts of the world and  within the realistic time frame,  bring this diverse learning experience together to make up coherent results. This situation is described as 'virtual university'. Although this definitely poses huge challenges to government in terms of provision of funds to put required facilities in place and to traditional institutions whose structures and modes of operation are ill equipped to deal with such social and educational revolution

The use of ICT in teaching and learning prepares the current generation for a workplace where ICT is a common phenomenon and tools for their daily operations. The ability to use ICT effectively and efficiently provides a competitive environment in an increasingly globalizing job market. However the fact still remains that computer literacy is not enough requirements for well-paying jobs in the new global economy but it is a means to an end. En-Gauge of the North Regional Educational Laboratory (USA) has identified what he calls "21$^{st}$ century skills"

**Table  1. Skill Needed in the Workplace of the Future**

| Digital Age Literacy | |
|---|---|
| Functional Literacy | Ability to decipher meaning and express ideas, in a range of media; this includes the use of images, graphics, videos, charts and graphs or visual literacy |
| Scientific literacy | Understanding of both the theoretical and applied aspects of science and mathematics |
| Technological literacy | Competence in the use of information and communication technologies |
| Information literacy | Ability to find, evaluate and make appropriate use of information, including via the use of ICTs |
| Cultural literacy | Appreciation of the diversity of culture |
| Global awareness | Understanding of how nations, corporations, and communities all over the world are Interrelated |
| **Inventive Thinking** | |
| Adaptability | Ability to adapt and manage in a complex, independent world |
| Curiosity | Desire to know |
| Creativity | Ability to use imagination to create new things |
| Risk-taking | Ability to take risks |
| **Higher –Order Thinking** | Creative problem- solving and logical thinking that result in sound judgments |
| **Effective Communication** | |
| Teaming | Ability to work in a team |
| Collaboration and interpersonal skill | Ability to interact smoothly and work effectively with others |
| Personal and social Responsibility | Be accountable for the way they use ICTs and to learn to use ICTs for the public good |
| Interactive communication | Competence in conveying, transmitting, accessing and understanding information |
| High Productivity | Ability to prioritize, plan, and manage programs and projects to achieve the desired results. ability to apply what they learn in the classroom to real-life contexts to create relevant, high-quality products |

Source: Adapted from EnGauge, North Central Regional Laboratory. Available Online at http:www.ncrel.org/engauge/skills/21skills.htm Accessed 14 June 2006.

 The effect of ICT only be felt when it is used as a tool for the improvement of educational standard and better learner environment.

**Challenges of ICT in Open Distance Learning**

       Haven discussed some of the benefits associated with the use of ICT in Open Distance Learning, there are major setbacks which the marriage is facing presently.

Amongst these is the one noted by Aron (1999) when he observed that the on-line classes always have high drop-out rate because learners may not be computer literate. More often than not, they have problems of accessing the internet for test and examinations. When many people try to access the net at the same time, the server works very slowly or almost inaccessible especially in the developing world where the ICT infrastructures are just being put in place or not well rooted. As observed by MaDonald (2002), many learners prefer face to face in the traditional method and find web-based teaching frustrating. The telecast and broadcast materials are barely accessible to the most distant learners without interruptions.

In a country like Nigeria, where there is epileptic power supply, alternative supply (solar) should be made available because lack of regular supply of power is a serious issue in the use of ICT and also a cog in the wheel of progress and development as it affects all areas of production, storage and maintenance .There is also the problem of cost in the use of ICT. The machines are expensive to procure and maintain. It is hoped that donor agencies, Non-governmental Organizations and well-to-do individuals will invest in Open Distance Learning.

The instructors of open distance learning need to be trained in the use of technology though according to Bates (1995) suggests that newer technologies are not inherently better than old ones and many of the lessons learned from the application of older technology will still apply to any newer technology. The fact remains that the best distance education practices depend on creative, well-informed instructors (Greenberg, 1998).

In some countries like Singapore, Malaysia and the United Kingdom teaching accreditations requirement include training in ICT use. Teachers need to continuously upgrade and keep abreast of latest development and best practice. For effective use and uninterrupted classes in the ODL mode of education, technicians must always be on ground to see to any malfunction during classes. An instructor may be knowledgeable in the use of technology but not likely in its repair. If there is any problem with any machine during the course of an instruction and there is no technician to rectify it immediately or if it is a complex problem, the lesson will definitely come to a halt. (Not at all, computers are now made to have virtually all important languages of the world. This is not tenable Even because of economics the software developers writes their software instructions in every language for the purpose of market share or else they are on the losing side and at the same get opened to the pirates)

## Conclusion

Keegan (1995) asserts that the challenge is to design cost and educationally effective system for use in the new millennium of new technologies that permits for the first time in history the electronically teaching of learners face-to-face though at a

distance. Naturally, cost of technology will reduce with time as more people import and involve in the sale, installation and maintenance.

In all other countries where ODL is practiced, the story is different from that of Nigeria. The success rate is very high, the impact is felt in such country and the income generated for the country through such institution is immense. The institution where ODL is being practiced, suppose to be the financial nerve center of the country. It hoped that very soon, The Nigeria ODL will get over all its teething problems and perform as excellently as its counterparts across the globe as this will boost the country's education, manpower and economic status.

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