The Role of Information and Communication Technology in Open Distance Learning

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ABSTRACT   *The system of learning at presentis getting very nearer to Information andCommunication Technology (ICT) which has also been playing a central role in the delivery strategies of Open Distance Learning. ICT is increasingly used in Open Distance Learning process all over the world. This means distance students have access to ICT in many different aspects as it replaces direct teacher-student interaction. Anything that helps distance learner to communicate, learner with resource person, learner with learner and learner with learning materials may be termed as Information and Communication Technology. Technological advancements especially in the area of ICT allow resources person to employ various strategies that could actively engage learner's interest. This paper attempts to focus on the role of Information and Communication Technology (ICT) in Open Distance Learning.*

Key words:I.C.T.

Introduction

Education is the basic need of every human being and today's technology plays a greater role in every sphere of life. Therefore, thepresent day technology has crept its way into learning and teaching environments and in turn,it will increase literacy levels on the use of this technology. Information and communication technology plays a significant role in expansion of education. Studies have shown that education has improved communicationin regions that were once thought hard to reach such as places in sub-Saharan Africa are now accessible through eLearning. Tutors can lecture learners over long distances and scholars can achieve their academic papers through eLearning. Also, students that feel like studying from home can now do it.

Information and communication technology in education has improved over a period of time and has also brought about an easy access to different learning resources which will help to improve teaching skills and learning abilities of students. These learning resources include audio and visual education. Students are taught with projectors in classrooms or lectured through class speakers. Students and teachers can also easily download eBooks from the internet which can be read from anywhere through phone or tablet.For children with disabilities, information technology in education has brought gadgets to help them with learning. For instance, the hearing impaired use electronic devices called hearing aids. They can also use visual learning where sign language is used on electronic media to enhance communication. This has been a role of information technology in education.

Combined learning is also improved. Information technology in education has made it possible for learners to have study groups. Students can now create combined ideas, solve problems and learn more through

group studies and academic forums online. The incorporation of information technology in education has brought so many positive changes. More academic systems should embrace technology because it makes teaching more effective and aids in practical learning. Students should also embrace it because in the future, most of the jobs will be technologically based. With*time, everyone will see the significance of information technology in education.*

Methodology

The proposed paper mainly is descriptive-analytical in nature. Relevant books, articles and newspapers are referred while preparing this paper and information are collected from the concerned sources as per need to strengthen the paper.

Distance learning

Distance education is planned learning that normally occurs in a different place from teaching necessitating special techniques of course design. Instruction, special method of communication by electronic and other media and special organization and administrative arrangements (Moore and Kearsley)[1] Open and distance learning is defined by the Commonwealth of learning as "a way of providing learning opportunities that is characterized by the separation of teacher and learner in time, or place or both time and place; learning that is certified in some way by an institution or agency; the use of variety of media including print and electronic; two way communications that allow learners and tutors to interact; the possibility of occasional face to face meetings; and a specialized division of labour in the production and delivery of course."

Moore's (1989)[2]defined distance education as, the separation between learner and teacher, such that the communication between the two is necessary in the educational transition is transmitted through print, broadcasting, telecommunications media correspondence institution through the mail, audio and video recording, computers and various combinations and variations of these. Distance education is the delivery of learning or training to those who are separated mostly by time and space from those who are teaching training. The teaching is done with a variety of "mediating process" used to transmit content, to provide tuition and to conduct assessment or measure outcomes.

Nipper (1989)[3] was the first to suggest that distance learning was moving into its "third generation". Referring to correspondence education as the" first generation" model of distance learning and multimedia distance education as the "second generation" model. In these models little or no student-student and student-teacher interaction occurs. Third generation of distance education, also known as interactive, multimedia distance education, places an emphasis on communication and learning as a social process typically through the addition of interactive media such as computer medicated communications, audio graphics or video conferencing.The third generation of distance education is based on the use of information technologies. Taylor (1995)[4] has further developed Nipper's ideas. With the combination of interactive multimedia (IMM) access to WWW resources, and asynchronous computer conferencing being designated as the "fourth generation" or "Flexible Learning" model.

One of the strengths of the Multi-media Model of distance education is that it has concentrated efforts on improving the quality of the student's individual interaction with learning materials. As Bates (1991)[5]has highlighted that social interaction between

learners and teachers needs to be balanced with the individual student's interaction with teaching-learning resources including computer assisted learning program.

Need and Importance of Information Technology in Distance Education

Need of Information Technology in Distance Education

1. Education is a lifelong process, therefore anytime anywhere access to it is the need.

2. Information explosion is an ever increasing phenomena, therefore there is need to get access to this information

3. Education should meet the needs of variety of learners and therefore, information technologyis important in meeting this need

4. It is a requirement of the society that the individuals should posse's technological literacy

5. It is required to increase access and bring down the cost of education to meet the challenges of illiteracy and poverty - information technology is the answer

Importance of Information Technology in Distance Education

1. Access to variety of learning resources

2. Immediacy to information

3. Anytime learning and anywhere learning

4. Collaborative learning

5. Multimedia approach to education

6. Authentic and up to date information

7. Access to online libraries

8.Better accesses to children with disabilities

Advantages of Information Technology in Distance Education

1. Access to variety of learning resources

Information technology aids plenty of resources to enhance the teaching skills and learning abilities and now it is has become easy to provide audio visual material to learners of education. The learning resources are being widened now, with this vivid and vast technique as part of the IT curriculum, learners are encouraged to use computers as tools to be used in all aspects of their studies. In particular, they need to make use of the new multimedia technologies to communicate ideas, describe projects, and order information in their work.

2. Immediacy to information

IT has provided immediacy to education New IT has often been introduced into well-established patterns of working and living without radically altering them. For example, the traditional office, with secretaries working at keyboards and notes being written on paper and manually exchanged, has remained remarkably stable, even if personal computers have replaced typewriters.

3. Any time learning

Now in the era of computers and web networks the pace of imparting knowledge is very fast and one can be educated at any time. A student can study whenever he requires any information irrespective of time and place, because of the boom in IT.

4. Collaborative learning

Now IT has made it easy to study as well as teach in groups or in clusters. With online we can be unite together to do the desired task. Efficient postal systems, the telephone (fixed and mobile), and various recording and playback systems based on

computer technology all have a part to play in educational broadcasting in the new millennium. The Internet and its Web sites are now familiar to children in developed countries and among educational elites elsewhere, but it remains little significance to very many more, who lack the most basic means for subsistence.

5. Multimedia approach to education

Audio-visual education, planning, preparation, and use of devices and materials that involve sight, sound, or both, for educational purposes. Among the devices used are still and motion pictures, filmstrips, television, transparencies, audiotapes, records, teaching machines, computers, and videodiscs. The growth of audio-visual education has reflected developments in both technology and learning theory.

Studies in the psychology of learning suggest that the use of audio-visuals in education has several advantages. All learning is based on perception, the process by which the senses gain information from the environment. The higher processes of memory and concept formation cannot occur without prior perception. People can attend to only a limited amount of information at a time; their selection and perception of information is influenced by past experiences. Researchers have found that, other conditions being equal, more information is taken in if it is received simultaneously in two modalities (vision and hearing, for example) rather than in a single modality. Furthermore, learning is enhanced when material is organized and that organization is evident to the student. These findings suggest the value of audio-visuals in the educational process. They can facilitate perception of the most important features, can be carefully organized, and can require the student to use more than one modality.

6. Authentic and up to date information

The information and data which are available on the net is purely correct and up to date. Internet, a collection of computer networks that operate to common standards and enable the computers and the programs they run to communicate directly provides true and correct information.

7. Online library

Internets support thousands of different kinds of operational and experimental services one of which is online library. We can get plenty of data on this online library. As part of the IT curriculum, learners are encouraged to use computers as tools in all aspects of their studies. In particular, they need to make use of the new multimedia technologies to communicate ideas, describe projects, and order information in their work. This requires them to select the medium best suited to conveying their message, to structure information in a hierarchical manner, and to link together information to produce a multidimensional document.

8. Better accesses to children with disabilities

Information technology has brought drastic changes in the life of disabled children. IT provides various software and technique to educate these poor peoples. Unless provided early with special training, people profoundly deaf from birth are incapable of learning to speak. Deafness from birth causes severe sensory deprivation, which can seriously affect a person's intellectual capacity or ability to learn. A child who sustains a hearing loss early in life may lack the language stimulation experienced by children who can hear. The critical period for neurological plasticity is up to age seven. Failure of acoustic sensory input during this period results in failure of formation of

synaptic connections and, possibly, an irremediable situation for the child. A delay in learning language may cause a deaf child's academic progress to be slower than that of hearing children. The academic lag tends to be cumulative, so that a deaf adolescent may be four or more academic years behind his or her hearing peers. Deaf children who receive early language stimulation through sign language, however, generally achieve academically alongside their hearing peers.

The integration of information technology in teaching is a central matter in ensuring quality in the educational system. There are two equally important reasons for integrating information technology in teaching. Pupils must become familiar with the use of information technology, since all jobs in the society of the future will be dependent on it, and information technology must be used in teaching in order to improve its quality and make it more effective.

Disadvantages of Communication Technology in Distance Education

One of the main disadvantages of distance education is the loss of interaction with other students in the classroom.[6]In distance learning, study in a group is difficult, one just have to do by himself which becomes publicly one-off as there is no communication with other classmates. There is no chance for communicating with classmates and teachers orally. The interactions help to develop critical thinking and problem-solving skills. Much distance education programs have developed online forums or chat rooms for students to share ideas and communicate, but it is only a partial substitute for the interaction you get in the classroom with a teacher and other students. If the classroom environment is what you like most about learning you may want to take a step back and reconsider distance learning. You'll likely get some interaction on chat rooms, discussion boards and through email, but the experience will be quite different than traditional courses.

It is true that distance education provides good chances to learn new things and technologies but it is complicated. It comes as challenge for people who are frightened of technology. A computer with continuous Internet facility is required for distance learning. Also, it needs careful planning and big costs to set up for tools and facilities like live video communications which is a must in this form of education.

1. **Hidden costs**:

Some unseen charges cannot be escaped. For instance, if a student lives or works in an outside area where irregular supply of things then the study material need to be mailed in advance. There will be sure extra charges and other costs which comes another point in bringing uneasiness to many. In distance learning, student and instructor also need to make proper plan much in advance to get the good and best result. Virtual courses can save money on constructing classrooms, dormitories and the overhead.

2. **Distance learning programs still can be expensive**.

Once the course or program is operational, the costs for keeping the technology current, developing new materials, updating courses, and marketing the courses still must be figured into the annual budget. Therefore, the provider usually should have the funds and technical support readily available to meet today's needs, and also should have the resources to expand their technical capabilities as the Internet expands its services.

3. **Immediate.feed-back not possible**

Distance learning is not like a regular classroom. Instead they have to wait for their teacher's reviewing the task and send them for comments. Format isn't ideal for all learners. Not everyone is an ideal candidate for online learning. If you know you have problems with motivation, procrastination and need lots of individual attention from a teacher you may want to think long and hard before enrolling in an online learning program. Some employers don't accept online degrees. While a majority of employers will, there are some who still see a stigma attached to distance learning. Realize that your online degree may not be the ideal tool for some job fields or for future learning.

4. **Requires adaptability to new technologies**:

If you've never been one to like working with technology you will probably get less out of an online course than your more tech-savvy counterparts. Make sure you feel comfortable working with computers and with online programs before you sign up for a class. Depending upon one's own situations, one can match up and decide what he should choose for providing the educational and professional qualifications. For providing distance education the use of the Internet is the best way. Technology the Internet and World Wide Web Distance learning programs involve many kinds of technology. The Internet and World Wide Web (WWW) are the primary means of presenting educational information. Once learners have subscribed to, or signed up for an Internet provider, they gain access to the educational materials and services designed for the Internet and WWW. The educational information is stored electronically, thus learners with access to the site can download or use the information as long as it is stored there. This makes it easy for learners to work at their own place and to visit the site as frequently as they like. The Web can provide learning information in many different interesting formats. It can present information in sound bits, such as music, voice or special effects. Graphics may be also presented in a special type of artwork such as animation or video. In addition to working with the Web, the learners may be asked to send e-mail messages, subscribe to mailing lists or participate in newsgroups, and online videoconferencing.

Although distance education is very flexible and convenient, it still cannot provide the 'college experience.'Working with other learners, being part of a total educational environment, and collaborate closely with academic mentors is still valuable to many learners. In addition, some courses cannot be taught on the Internet and this causes some limitations of distance learning.

There is another problem and it is related to technology. Not every student knows how to attend virtual classrooms well. Most of them do not have the hardware and software capability to receive video via the Web. Many teachers are also reluctant to switch from the traditional methods of teaching to technology-oriented approaches. In addition, the performance of distance learning programs through the Internet cannot be guaranteed. Because the bandwidth for the average student is still low, while the requirements for audio and video are high. These technological issues need to be resolved. Thus, the role of the traditional academic institution is changing, colleges and universities will have to compete with a growing number of other educational providers.**[8]** This trend should promote more collaboration among business, industry and academia to provide high-quality, innovative education. The future of distance education depends primarily on the creative use and development of new technologies. As learners

become more aware of the potential developing knowledge and skills more easily and conveniently, the need for new materials and presentation media should continue to increase.

Working mechanism of distance education

First of all, the learner should decide what kind of distance learning program he wants to take. There are many web sites providing plentiful distance education resources, and the potential learners can link to each resource mentioned. When the learner links to the Web site that he is interested in, he can see the goal, content, policy, and tuition of the educational programs. He also should notice the hardware and software requirement and should set the equipment before starting his distance learning. The lectures are presented online, and teachers may pose questions to begin the discussion. Teachers frequently place course readings on the Web enabling students to print entire lectures or take notes. Sometimes teachers also choose some books or journals as textbooks. These textbooks are often supersedes by information available electronically on the Web sites. Teachers also assign homework, and students should complete it by scheduled deadlines, just as they would be on campus. Sometimes students may be devised to several groups to work together for a group project. At that time, they can use e-mail, subscribe mailing list or participate in an electronic conferencing or a newsgroup to seek for information and comments about their assignments. When learners or faculty want to lean back or relax, they can meet via 'chat room,' which serves as an informal chat station. If learners need assistance, they can call or e-mail their teacher. Some teachers even have teaching assistants assigned to each course to answer questions by e-mail (Ryan1997, p.76**).**

This kind of interaction can lead to more personal help and attention than that afforded by a traditional lecture classroom setup. Some teachers may also ask students to take online quizzes or exams to evaluate their performance. Most educational computer systems can keep track of each student's progress and can make reports to the teacher. The Internet is one of the least costly approaches to provide interconnection. Furthermore, through the Internet, the distance learning community can access hundreds of libraries and databases. It is very convenient. Moreover, the educational material can be stored on a Web site. Students and teachers also have a written record of what everyone in the class says during the discussion. There is a greater potential for sharing information through the Internet than through other means of transmitting and receiving information. Not everyone can be well suited to distance learning programs. Successful participants must be highly motivated and self-disciplined. Because the course may be unmonitored, the learners themselves have full responsibilities for proceeding with the course and evaluating their mastery of a skill or subject.

Conclusion

Information and communication technology is an important field incorporating almost all technologies that a society has to adopt for expansion of education in general and distance education in particular. The ICT has also changed the way people communicate in so many ways. Distance learning is a method of learning at a distance rather than in a classroom. There are advantages and disadvantages of Information and Communication Technology.

Technological advancements especially in the area of ICT allow resources person to employ various strategies that could actively engage learner's interest and thesystem of learning replaces direct teacher-student interaction. Late 20th-century communications technologies, in their most recent phases multimedia and interactive, open up new possibilities, both individual and institutional, for an unprecedented expansion of home-based learning, much of it part-time. The term distance learning was coined within the context of a continuing communications revolution. It widens access for students unable for whatever reason (course availability, geographical remoteness, and family circumstances, individual disability) to study alongside others. At the same time, it appeals to students who prefer learning at home. In addition, it appeals to organizers of professional and business education, providing an incentive to rethink the most effective way of communicating vital information. A powerful incentive has been reduced costs per student. At the same time, students studying at home themselves save on travel time and other costs. Thus the ICT plays a significant role in the present system of learning.

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Faith is a knowledge within the heart, beyond the reach of proof.
~ Khalil Gibran