

CHAPTER TWENTY-NINE

ROLE OF INFORMATION AND COMMUNICATION TECHNOLOGIES IN OPEN AND DISTANCE LEARNING

Tukura, Charles Saidu PhD. & Ilufoye, Timothy Olawale
Federal University of Technology, Minna, Nigeria

Objectives

At the end of this chapter, you should be able to:

1. Define open and distance learning terminologies,
2. State the characteristics of open and distance learning,
3. Describe different ICT tools can be integrated into open and distance learning and
4. State the advantages of ICT utilization in ODL.

Introduction

Information and Communication Technology (ICT) has permeated every sector in the society. In teaching and learning process for instance, ICT tools are being used to enrich and stimulate learning. The success of any ODL programme relies heavily on the availability and extent of utilization of ICTs for the distribution of learning contents, for supporting learning and for stimulating learners by means of one-way or two-way communication process. This Chapter therefore, focuses on the important roles of different technologies needed in ODL as well as measures to be taken in order to benefit maximally from their usage.

Open and Distance Learning Terminologies

There are several terms and concepts relevant to distance education. Some of them are defined for the purpose of clarifications, thus:

- (i) **Open and distance learning** refers to learning experiences provided through the use of telecommunication means and products rather than through traditional lecture method.
- (ii) **Distance learning** refers to an educational setting where learners and the education providers are not in the same physical environment but interact through the use of synchronous and asynchronous communication tools for most or all of the learning sessions.
- (iii) **Open Learning** refers to a flexible independent learning initiative where learners determine the content to be studied, the conducive place to study, the convenient time to study and the pace at which to study, mostly without the guidance of a tutor.
- (iv) **Flexible Learning** refers to provision of access to education in such a way that afford learners to determine the time, place and pace of study with the sole purpose of satisfying their learning aspirations.
- (v) **E-Learning** is the learning process in which communication and presentation of instructional content is done by using electronics means rather than through face-to-face presentation. It is an innovative means of making learning contents more readily available to learners irrespective of their location.

Characteristics of Open and Distance Learning

Keegan (1996:44) observed that despite the fact that both the learners and tutors are in different locations in distance learning setting, the quality of such programme is not inferior as they are

usually accredited by appropriate institutional body and that the essence of separation in time and time between the learner and the tutor is to ensure accessibility to education in a most convenient manner. This was buttressed by Commonwealth of Learning (2000) which pointed that, most ODL systems have a philosophy that aims at ensuring that learners irrespective of their location have access to quality education and allows learners to determine their most convenient period to study, the duration of their study and location of study. Specifically, the major characteristics of open and distance learning are stated as follow:

- (i) There is no age restriction in terms of enrolment and graduation for a programme of study,
- (ii) Learning content and support activities are rendered majorly through telecommunications,
- (iii) The learner is afforded opportunities to study at his most convenient pace, place and period,
- (iv) Face-to-face interaction between the learners and education provider is limited
- (v) Assessment and evaluation of learning progress is flexible in terms of time and mode of conduct

Open and Distance Learning Relevant Technologies

The application of various media and technologies that are relevant in distance education are briefly described thus:

(i) Audio Technology: This is a relatively easy, readily available and cost effective technology that affords learners opportunities to decode learning content via their auditory sense organ. For open and distance education purposes, relevant audio contents can be packaged and forwarded to learners on mobile devices, social media platforms, compact disc and Mp3 and such content can be used with ease and everywhere. Learning contents and instructional guide can be recorded, radio programme can be scheduled and broadcast to students and this can also be recorded for playback purposes later. Some of the facilities that support audio technology include; radio set, mobile devices, compact disc player, mp3 player, tape recorder and audacity software.

(ii) Audio-Visual Technology: Audio visual technology is an effective means of presenting learning content to distance learners. It affords the learners opportunities to hear and at the same time see the content being studied. Television programs, recorded videos and computer-based programs are all effective technologies that can be used to disseminate and support learner's studies in open and distance education. Learners can watch live television broadcast, record and playback video learning content. Audio-visual technology is also relatively not expensive and not difficult to use by learners. Television set, computer, mobile devices, social media platforms, cable television programs, video player are some of the facilities required for successful utilization of audio-technology in open and distance learning.

(iii) Mobile Technology: Mobile devices are hand-held and portable. They can easily be used by distance learners to engage in independent studies as at when needed both online and offline. They include devices like Android, Smartphones, iPad, Tablet and Personal Digital Assistance (PDA).

(iv) Social Media Technology: There exists several social media platforms which people use to interact with one another. Such platforms can also be effectively used to facilitate interaction among distance learners and also between them and their tutor and facilitators, if proper care is

taken. Facebook, WhatsApp, Twitter, Youtube, Instagram, SnapChat, LinkedIn and several others can be used for synchronous and asynchronous interaction with regards to learning content in open and distance learning setting.

(v) Live Streaming Technology: Live casting or live streaming is used to describe the process of transmitting real-time live video and audio over the internet. With internet facilities and supportive encoding software downloaded on student's device, lecture presentations and demonstrations can be streamed to students on YouTube for instance.

(vi) Video Conferencing Technology: is the video interaction between two or more people from different locations through the use of telecommunication tools that synchronize and transmit both the sound and moving. This technology is useful in open and distance learning as it allows tutors and learners (arranged in groups of up to 12 people) to watch presentations and demonstrations, and simultaneously give a video chat face-to-face feedback from diverse locations. Skype, Google Hangouts, Oovoo, Anymeeting, Gotomeeting are some of the popular conferencing software.

(vii) Computer Technology: Open and distance learning relies majorly on the use of computer technology. Whether offline or online, computer hardware and software are used to encode and decode learning contents. Most computers support the use of Compact Disc, DVD, Flash drives, Memory cards, downloadable and installable software and internet accessories that make independent study (one important characteristics of open and distance learning) possible.

(viii) Internet/Online Technologies: Through computer/mobile devices, web browser and internet connection, open and distance learners can launch into the World Wide Web to study online and complete exercises online and make submissions online. Most distance learning institutes have customized Learning Management System which are online based and with internet facilities students enroll, participate and are evaluated online.

Advantages of Audio Technology Utilization in Open and Distance Learning

Listed below are the major advantages of audio technology when used in ODL:

1. Audio technology hardware and software are relatively not expensive and can be afforded by learners.
2. It is simple and easy to use by learners at their own convenient time.
3. It is readily accessible to learners on mobile phones, car, home, office and so on; and
4. Audio content can be recorded and used over and over again.

Advantages of Video Technology Utilization in Open and Distance Learning

Some of the major advantages of video technology utilization in ODL are explained below:

1. The possibility of using more than one sense organ to decode instructional content conveyed by video technology aids learners' assimilation, understanding and retention of knowledge better than audio technology.
2. It enables learners to see the facial expression and body language of instructor and this aid communication and understanding.
3. It is not too expensive for learners to afford when compared to other sophisticated technologies.
4. Most video communications are synchronous, thereby allowing high degrees of interactions and feedback.

Advantages of Computer Technology in Open and Distance Learning

Computer technology has the following major advantages in open and distance learning:

1. It allows learners to engage in independent study at his own pace and receive prompt feedback.
2. With computer technology, learning contents can be well exemplified and illustrated using different and appropriate modes of messages such as text, audio, animations, audio-visual, hypermedia and multimedia.
3. It enables a learner to interact with other learners and instructors with internet and intranet facilities.
4. It allows the use of internet which aids students' participation, communication and engagement in in-depth search for study materials; and
5. Learning materials prepared on computer can be modified when need arises, can be stored, retrieved and shared with other users.

Advantages of Online Technology in Open and Distance Learning

1. Online learning content is readily accessible to learners once there is internet connection.
2. Several useful links are available online, these links direct a learner to other relevant learning contents from diverse locations around the world.
3. It facilitates prompt interactions between learners and learners/instructors on learning matters, and
4. The cost of learning may be inexpensive since most online technologies do not require expensive hardware.

Conclusion

With Information and Communication Technologies (ICTs), the goals of open and distance learning are achievable. ICTs are useful tools to be employed for any meaningful 21st distance learning programme. They are available, affordable, reliable and afford a learner the opportunity to study at his convenient time and pace using learning materials that are prepared in mixed-media formats.

References

Commonwealth of Learning (2005). *Creating Learning Materials for Open and Distance Learning*: Canada: Commonwealth of Learning.

Keegan, D. (1996). *The foundations of distance education*. London: Croom Helm.

NOUN (2004). *EDU 332 Courseware: Educational Technology*. National Open University of Nigeria.

About the Authors

Dr. Tukura Charles Saidu is an educationist and currently the Head of Department, Educational Technology, Federal University of Technology, Minna while **Ilufoye Timothy Olawale** is an educationist and a researcher in the Department of Educational Technology, Federal University of Technology, Minna.