

Technology in Enhancing the Quality of Instruction and Assessment in (ODE)

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Abstract

Gradually but steadily, many more nations are becoming aware that their much desired increase in access to education cannot be attained by insisting only on the conventional mode. Hence, the growing interest now being devoted to Open and Distance Education (ODE) system. As a mode of education delivery, the ODE system to be realistic and effective would require the use of high technological innovations. This validates the notion that Distance Education is deeply wrapped in the history of instructional technology. This paper focuses on technology in enhancing the quality of instruction and assessment in ODE institutions. It stresses that the quality of instruction, interaction, assessment and general credibility of ODE programmes can be enhanced by using various technological initiatives in the classroom. It underscores the strategic position technology occupies as a bridge between the learner and a more meaningful and realistic instructional process.

Introduction

Globally, Information and Communication Technology (ICT) is fast gaining the attention of the government of most nations as a veritable tool towards achieving sustainable development and competitiveness. This interest can be noticed in almost every sector of the economy as concerted efforts are being made to ensure that existing institutions are technologically revolutionized.

The educational institution, which is highly regarded as any nation's instrument of excellence in all her developmental aspirations is not left behind in this noble innovation. As a cost intensive industry, the application of technology has drastically reduced routine expenditures and enhanced educational cost effectiveness. Thus, technology has become of a tremendous benefit in addressing very crucial and sensitive aspects of the educational system towards quality assurance. The instructional process and the increasing need to ensure realistic assessments in our nation's educational system are presently focal areas of technological interest. In this paper effort is made to consider technology in enhancing the quality of instruction and assessment in open and distance education system.

The Meaning of ODE

The concept distance learning, distance teaching, correspondence study education, home study, external study and independent study are all terms used interchangeably in discourses that involve Distance Education. Therefore, there is the need to clarify some of these terms before proceeding. Keegan (1996) holds that the compound concept Distance Education subsumes these other terms as most of the terms merely address specific aspects of distance education.

While Distance learning described the use of print and electronic technologies to present individualised lessons to learners. Distance teaching refers to the didactic strategies of delivery of instructions to students. Correspondence study entails distance education through the postal sub-groups. Home study which is used mostly in United States but seriously condemned as a term in Distance education because the distance learner is not confined to studying at home alone. External study is a form of education that is external to but not separated from the faculty staff of the institution offering distance education programme. An independent study is used to denote a range of teaching and learning activities which indicates students' control over learning time, pace and place. However, this is misconstrued as independent from an educational institution which is not usually the case (Keegan, 1996; Kanfinan, Watkins and Guerra, 2001). Thus, Mudasiru, 2006, had asserted that Distance education has within its purview, elements of these terms.

There have been various perspectives at defining distance education. Holmerg, (1990) defined distance education as:

The various forms of teaching and learning at all levels which are not under the continuous, immediate supervision of tutors present with their students in lecture rooms or in the same premises but which nevertheless benefit from the planning, guidance and tuition (i.e. tutoring, teaching) of the staff of the tutorial organization. Its main characteristic is that it relies on non-contiguous, i.e. meditated communication."

Distance education is any educational process in which all or most of the teaching is conducted by someone geographically removed from the learner, with all or most of the communication between teachers and learners being conducted through electronic or print or both media together (UNESCO, 2002) This approach to learning seeks to free learners from conventional constraints of time and place. Distance education is a term used to describe the student-centeredness of distance education and it deals with the use of print and electronic technologies to present individual lessons to learners at a distance (Mudasiru, 2006). For Adeboye (2007) it is a type of education that takes place outside the conventional school system. It is imparted without necessarily having personal interaction with students or learners.

Distance education is said to be open because of freedom and convenience it largely gives to the students. These are evidenced in admission policies, freedom to select what, when and where to learn. It is also evident in its relatively flexible organizational structures, delivery and communication patterns as well as the use of various technologies to support learning. It is intended to reach learners, breaking the barriers of time and place, in their offices, homes, shops, etc. This therefore, creates opportunity for life-long learning and provides them with resources that qualify them without attending formal classes. (Duruh, 2012). Similarly, Calvert (1986) had written that distance education helps extend the market for education to clientele who have not been previously served. In essence, it takes education to people irrespective of time, place and pace, age not withstanding. Distance education affords people the opportunity to regain hitherto lost time as though nothing was lost.

Major Strengths of Distance Education Systems

In conventional system, as well as distance education systems, there are some advantages over weaknesses and disadvantages. Strengths are described as follows (Dalton, 1987 as cited in Chung, 1991; Jevons, 1984 as cited in Chung, 1991), Purdy, 1986; as cited Chung, 1991; and Tang, 2009):

1. Class sessions are smoother.
2. Texts and graphics are presented more effectively.
3. More courses are offered.
4. An opportunity to deliver instructional materials and teaching strategies through different media is provided.
5. More diverse groups of learners are gathered.
6. Easier chance of accessibility is given to the learner.
7. Independent learning is granted to the learner.
8. More control over instructional materials is produced.
9. An opportunity to improve pedagogic qualities is given.
10. Staff development results.
11. In the long term, more money is saved.
12. More enjoyment is elicited in learning by learner. Edward (1988) expresses that.
13. Overcoming the difficulties and helping disadvantaged and disabled learners resulted. Many forms of prejudice and oppressive attitudes may play out in schools; distance education system tend to decrease them (Kumashino, 2000; Larreamendy-Joems and Leinhart, 2006). So
14. More democracy is practiced.
15. Distance education is correlated with learner's self-efficiency and academic achievement.

Distance Education Technologies and Media Utilization

The distance education system is observed to have two forms as follows:

1. The learner operates independently; and
2. Classroom instruction is accompanied by distance learning (California Distance Learning Project (CDLP, 2005). Either way, there is an overlap in terms of both technologies and media. The important elements are technological transmissions and the media applications.

The importance of transmitting instructional materials to distant learner through print, audio and video media and to deliver messages have always been stressed (Chung, 1991). These technologies and media can be applied in both traditional and modern forms of distance education systems in institutions in any country. They are as follows:

- Distant teacher
- Print media
- Textbooks, study guides and study aids
- Newspaper
- Audio technology and media

- Audio card
- Record
- Audio cassette and Reel-Reel audio tape
- Compact disc-read-only memory (CD Rom)
- Telephone
- Cell-phone
- Audio-text
- Radio
- Video technology and media
- Television and satellite
- Direct broadcast satellite
- Cable television
- Closed-circuit television
- Asynchronous and synchronous
- Teleconferencing
- Microwave
- Interactive video
- Computer
- Teletex and videotext
- Electronic book and electronic library
- Internet
- Weblog
- Electronic mail
- Chat-room
- Multimedia

The constraint of time and space has not allowed for a detailed explanation of the above instructional media systems.

Problem of Instruction Media Usage in Developing Countries

Distance education system has been used in both advanced and developing countries but in regard to the degree of advancement, countries benefit from the system and the technology associated with it. The statistics show the more advanced the country is, the better chance it has for improvement (Sharma, 2003).

Developing countries have severe educational problems which postpone their improvement and keep them behind. These problems are:

- High population growth
- Disparities between urban and rural areas.
- Lack of enough teachers (especially the skilled ones).
- School graduate unemployment.
- High illiteracy rates, high school dropout rates; and

- Heavy reliance on foreign aid and personnel (Wells, 1976; de Moura Castro, 2004; and Gueye, 2007).
- Lack of resources, tight budget and high costs of developing distance education structures are many of the other problems which developing countries are facing (Tsang, 1988). Therefore, it is necessary that countries which decide to employ the system of distance education should consider their strengths and facilities to utilize the needed instructional media and methods.

Affective Variables in Distant Education System

There are many factors affecting a distance education system and they must be anticipated before starting the system. Thus, Wagner (1993) observed as follows:

1. Technological reliability
2. Institutional support
3. Organizational design and developmental issues

According to Wagner (1993) technological reliability means that institutional materials should be transmitted to the learner in a consistent and reliable manner; the institutional support should be addressed to the needs of learners, teachers, staffs, administrators and personal and finally the organizational designs and developmental issues are dealt with job designs, developmental structures and accommodation of technology with all its implications.

Reiser and Gagne (1982) put the emphasis on characteristics of learners, setting and tasks as key factors in media selection. Talent-Runnels, et al (2006) also confirm in designing the distance education systems the environment, learners' outcomes, learner's characteristics and institutional and administrative are the key factors related to delivery system variables.

If certain instruction needs teacher's presentation, the way of developing is important. Delivery presentation skills affect the success of distance education in institutions and they should be considered seriously Berg (2009) lists the characteristics of a successful instructor who (she/he) should understand the complexity of the distance education environment; be able to tolerate the paradox and the discomfort of this environment; learn to develop the passion for the context and have awareness of the environment; take risks of having new approaches; experiment with various media tools to find which one accomplishes the course objectives the best; spend time with team members and plan the details, should feel comfortable working with team members; be flexible in difficult settings; be able to think on many levels simultaneously; reach the audience and create the sense of presence; be willing to spend time on practicing and refining his/her presentation skills; be able to refine and reshape the curriculum continuously; be intuitive ; be able to develop contingency plans; be eager to search for quality; and develop a sense of humour.

Social presence is an important issue in distance education. Changwong (2008) considers it as an essential ingredient in both face-to-face and online learning environment and defines it as "how participants-in online learning environments-related, connect, share

ideas and information, speak with one another, establish relationships (through an agreed-upon means), (despite the physical separation) create a feeling of togetherness or intimacy.

Basis for Educational Technology in the Instructional Process

The importance of technology in enhancing the instructional process of the educational system cannot be over stressed. Educational technology, especially computers and computer-related peripherals, have grown tremendously and have permeated all areas of our lives.

Educational researchers and practitioners have told us from the beginning of the computer age, that for technology use to be successful in our schools it needed to be closely tied to school reform. Glennan and Melmed (1995) stressed that “Technology without reform is likely to have little value: widespread reform without technology is probably impossible” this underscores the imperativeness of technology in revolutionizing the instructional process of our school system.

Taking an overview of the instructional processes of the educational system, it could be seen that teaching is changing and in many ways becoming a more difficult job because of increasingly numerous contradictory expectations, including the following:

- We are living in an age of information overloaded with the expectation that students will learn high-level skills such as how to access, evaluate, analyze and synthesize vast quantities of information. At the same time, teachers are evaluated by their ability to have students pass tests that often give no value to these abilities.
- Teachers are expected to teach students .to solve complex problems that require knowledge necessary across many subject areas even as they are held accountable for the teaching and learning of isolated skills and information.
- Teachers are expected to meet the needs of all students and move them towards fulfilment of their individual potential even as they are presented to prepare students for maximum performance on high-stakes assessment tests that are the primary measure of student and school success.

In view of the above, technology can actually assist with some of these expectations and make teachers and their students more successful. However, as the world becomes more complex virtually year to year instead of the generations to generation pace of most of the last century education needs continue to shift from teaching and learning isolated skills and information within each content area to teaching skills that enable students to solve complex problems across many areas. Educators must prepare for a technology rich future and keep up with change by adopting effective strategies that infuse lessons with appropriate technologies. This makes a authentic assessment needs even more important: Assessment must keep pace with effective instructional technology use.

Technology being infused into the schools is ongoing, unstoppable and necessary. Thus, school use and access to new and current technologies is on the rise and more and more nations have established technology standards for students, teachers and administrators.

Assessment in the Instructional Process

Indeed, many researchers believe that using paper and pencil tests to assess students learning after students had been taught content through the use of technology is the wrong thing to do and the wrong focus of technology use. Russell and Haney (1997) studied the effects of test administration mode to see whether tests administered on computer versus paper and pencil have an effect on student's performance on multiple choice and written test questions. The study found that significantly higher cognitive level responses are written on computers than those written by hand.

Such findings suggest that the medium of instruction makes a difference in the accuracy and value of assessment in the classroom. Russell (2000) claims that technologies used during learning activities should also be used during testing. Further, he contends that student's assessment methods should match the medium in which students typically work and that advocates for state and local assessment programs should ensure students have access to the same technology in the assessment process as they have in the learning process.

In their study, Russell and Haney (1997) concluded that, "As more and more students in schools and colleges do their work with spreadsheets and word processors, the traditional paper and pencil modes of assessment may fail to measure what they have learned" the study suggests that more and more paper based assessments of today are becoming a thing of the past. Media characteristics of the technology used to administer the test also can present factors confounding tests results when students are more apt in one medium (i.e. paper and pencil tests) than another medium (i.e. computerized tests) that require keyboard skills). This is a concern that will continue to grow as more assessment become technology based.

No doubt, technology has been proved to accommodate learning styles and to be an effective monitor for students with specific learning needs. Furthermore, students working in collaborative team learning settings appear to function better when learning events are accompanied by technology use. In addition, technology also is important when used to provide distance learning opportunities to students who otherwise would not have access to course offerings. A reasonable conclusion here is that classroom computers and other technology can play many instructional roles from personal tutor and information source to data organizer and communication tool. So, it is important for ODE providers to consider how computers and other electronic technologies can enhance the learning experiences of students and increase their productivity. Therefore, technology has considerable potential for increasing interest in and improving the quality of the instruction in schools. However, technology can be effectively used if sufficient attention is given to the following: curriculum uses, instructional pedagogy used, assessment used, sufficiency of technology and access to the internet and ability of the teacher, especially, to model uses of technology.

The Challenges of Information and Communication Technology in Education

The application of Information Technology to every facet of the education industry has been observed to have some challenges as can be seen from the following:

- (1) the personnel normally entrusted with the responsibility of training/teaching students on the utilization of Information and Communication Technology are poorly equipped with the basic and necessary skills needed for the realization of the set objectives for

example about 50% of the lecturers in our tertiary institutions do not have e-mails and most times are computer ignorant.

- (2) The in-availability of resource materials needed for Information Technology (IT) is another major handicap. Resources such as computer, Radio, video conferencing, television, and telephone, are lacking; and where found it is either they are obsolete, weak or inadequate.
- (3) Cost and financial implication of acquiring and sustaining the usage of the resource material, Poverty on this side of the globe has been a thorn in the flesh of individual groups, institutions and government. Institutions cannot provide needed facilities and government are faced with conflicting responsibilities, making it impossible to satisfactorily meet up with the needs of every sector.
- (4) The issue of inadequate electric power supply has stagnated, hindered and obstructed growth and development J adversely. Electric power is needed to operate almost all Information and Communication Technology equipment and tools, in Nigeria. Power supply in this country has been epileptic, low, unsteady and at times unavailable in the rural areas of the country.
- (5) Conservatism on the part of educators is alarming. Most people (teachers inclusive) are not computer literate and as such do not feel they have to apply Information and Communication Technology in their teaching and learning process. They are comfortable with the old paradigm efface to face and teacher centered pattern of education. No matter the challenges, it cannot still explain away the importance and the great need for teachers to be ICT skilled in order to build their capacity to utilize internet for effective teaching delivery.

These challenges are expected to set every teacher who has not started to utilize Information and Communication Technology in teaching and to do something fast before they are declared redundant. This is because there are quite a lot of new generation breed that are already acquainted with Information and Communication Technology skills ready to take their jobs.

Conclusion

Technology in the educational system is indispensable because of its inherent potential in enhancing the quality of the instructional process. Therefore, concerted efforts should be made by all education service providers, the ODE in particular to explore the gains of this growing global initiative.

Recommendations

In order to adequately apply technology for the purpose of enhancing the quality of instruction and assessment in Open and Distance Education programme, the following recommendations are offered:

- There is the need to ensure that the tutors normally entrusted with the tasks of training/teaching students are adequately equipped with the basic and necessary technological skills and competence to be effective.
- The relevant resource materials required to ensure effective instructional activities should be made available, useable and functional.
- Since electricity power is required to operate almost all Information and Communication Technology equipment, its supply should be made constant.
- Information and Communication Technology resource materials are cost intensive materials in terms of their procurement and maintenance. Therefore, adequate funds should be provided to ODE institution in this regards.
- In revolutionizing the ODE programme, there is the need to engage the students in a particular or appropriate media in both teaching, dissemination of instructional materials and assessment procedures.

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