



THE IMPACT AND POTENTIALS OF OPEN AND DISTANCE LEARNING (ODL) ON VOCATIONAL TECHNICAL EDUCATION IN NIGERIA

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Abstract

Open and distance learning system was introduced to train people in essentially theoretical fields and was extended to the vocational and technical fields to meet up with the demands of the workforce required for the development of the nation. Technical and vocational education and training is an important aspect of Nigeria's educational and developmental objectives as enunciated in the National Policy on Education. It is in the bid to actualise these objectives that the National Open University of Nigeria (NOUN) (the first single mode ODL University in the West African sub-region) established a Centre for Lifelong Learning to offer diploma, certificate and proficiency certificate courses in technical and vocational areas of manpower needs. This paper defines and discusses the history of Open and Distance Learning, its mode of dissemination, challenges and roles in supporting technical vocational education and training.

Keywords: *Impact, potential, telecommunications, vocational, technical, education, Open and Distance Education, Distance Learning, Open Learning, Open Distance Learning.*

Introduction

Open and Distance Education (ODE) has undergone significant growth and changes over the last decade to a point that it is now widely accepted as a viable and valuable form of education in Nigeria. Distance learning and its relationship to emerging computer technologies have together offered many

promises to the field of education. Some of the shortcomings are however due to problems with the technology; others have to do with administration. Open learning in vocational education has much to offer the world of work because it is responsive, flexible, promotes independent learning, can be set up in a way that fosters teamwork as well as individual achievement and the immediate transfer of skills in the work setting. Open learning also reinforces qualities of self-reliance mobility and rapid adjustment to change needed for survival in tomorrow's world. That level of quality can only be met if the objectives are clear, and both the process of learning and the system requirements for supporting that process are well understood.

History of Distance Learning

There have been five generations of media in the history of distance education; with the current one as the fifth. The first dates back to the early 1700s, and this was the correspondence model based on print media technology such as news articles, flyers and, ultimately, the mail service. The second was the multimedia model based on audio and video technologies as well as print. The third was the tele-learning model based on applications of telecommunications technologies to provide opportunities for synchronous communication (this could include live video lectures). The fourth was based on online delivery via the Internet (Taylor, 1995). The fifth generation of distance education is essentially a derivation of the fourth generation, which aims to maximise the current capabilities of the Internet and the World Wide Web.

The first iterations of distance education were correspondence study courses offered through newspaper advertisements in the U.S. and England (Holmberg, 2005; Moore & Kearsley, 2004). Thereafter, correspondence study courses began to emerge as alternatives for learning throughout Europe and the United States. The process was very simple; students received instruction via mail and responded with assignments or questions to the instructor. The process was very slow and could take several weeks for a response from the instructor. Correspondence courses grew in spite of the drawbacks, in large part; thanks to maturation in postal service that allowed correspondents to study across long distances. I was fortunate enough to have experienced a correspondence course first-hand at Exam Success Correspondence in Lagos in 1977 as a secondary school student.

Assignments were mailed to my postal address, and there was never any direct communication with the facilitator other than through mail. Feedback for the assignments was given by mail; in some cases, responses from the facilitator took up to four weeks. The exams and quizzes were delivered by the vice-principal and mailed directly to the facilitator from the vice principal's office; this was to limit the opportunity for deception. The entire class was self-directed and taught completely from supplied reading materials. However, while learning out of a textbook may be effective, there was no opportunity for unique interaction with the facilitator or other learners in the class. Nevertheless, there was an opportunity to learn in correspondence courses, and the slow interaction did not hurt the process, but merely slowed it down. The feedback at the time was extremely meaningful and plentiful, as it would have had to be in such circumstances. The feedback and interaction are what fostered the learning. Just like distance learning in general from the days of correspondence courses to cassette taped continuing education to radio and video courses.

Correspondence courses marked the beginning of distance learning. With the development of television and videoconferencing, electronic elements began to create a slight change in the architecture of distance education. Before the Internet was embraced as a teaching tool, the use of video was a common method for teaching at a distance. There were several methods for facilitating a course using video for both asynchronous and synchronous teaching, including broadcast video and videoconferencing. Early attempts using these techniques required students to drive to facilities that could support videoconferencing and group participation. This was a viable method for teaching, especially if a student lived in a rural area where schools were in short supply. Benefits of video conferencing included a heightening of student motivation and improved verbal communication and presentation skills. In addition, videoconferencing is said to improve students' memory retention by appealing to a variety of different learning styles by including diverse media such as video and audio clips, graphics, animation, and computer applications. The visual connection and interaction among participants enhanced understanding and allowed both the content providers and the students to feel connected to one another. The visuals in this environment, as well as group interaction, created a vibrant learning environment that differed from the traditional classroom. The next few

generations of distance education added new flavors to the mix, including Internet-based tools to facilitate online training. As we will see, such additions created an uncertain future for web-based training and distance education.

The correspondence courses of the past have resulted into what we identify today as distance education. Distance education may be defined as an "institution-based formal education where the learning group is separated, and where interactive telecommunications systems are used to connect learners, resources, and instructors" (Ely, 2003). Let me clarify this description slightly. "Institution-based" means, typically, that a traditional educational institution has created a digital extension of itself in the form of an online school. It is not merely self-paced materials that are posted on the Internet for students. Rather, this model is facilitated, organised and backed by a brick-and-mortar institution that holds the same mission, values and integrity online as it does within the on-ground program.

This one element is what distinguishes distance education from self-study or web-based training. The separation of instructor and student in the past was interpreted as a geographic separation, but in the case of distance education as we know it today that is not entirely what is meant. Certainly, online students may not be in the same place at the same time, but there is more to the separation. Separation could mean asynchronous learning. In the asynchronous model, instructors and students need not be online at the same time, and assignments may be completed at the discretion of the student within certain deadlines and other parameters. Separation could also be interpreted as an intellectual gap between the knowledge of the instructor and the knowledge of the student. The goal of distance education is to eliminate this separation of knowledge.

Telecommunications is another component of contemporary distance education and is obviously one of the most important in the 21st century. The term "telecommunication" implies the use of electronic media such as video, telephone, audio and the Internet. In this model, telecommunication, such as simple correspondence via traditional mail service, may still be used, but it is (hopefully) rare. Distance education is, after all, synergistically linked to modem technology and is therefore distinguished from more traditional forms of education, a factor which may contribute to course development and

acceptance problems.

The final component of connecting learners, resources and instructors is that there is an instructor teaching in electronic form, there are resources available that support learning and courses are structured under design guidelines. In many cases, these very connections and interactions with the instructor, as well as other learners, are commonly the focus of distance education.

Current Popularity of Distance Learning

Distance learning is utilised in many areas of education; beyond higher education, it spans the spectrum of public, private and home-based primary through secondary, as well as corporate, military and government training. With the widespread acceptance of the Internet, web-based applications have become the cornerstone for online colleges and universities. In 2006, the Sloan Consortium reported that more than 96 percent of the largest colleges and universities in the United States offered online courses and that almost 3.2 million U.S. students were taking at least one online course during the fall 2005 term (Allen & Seamen, 2006). The growth of distance education has been staggering. In 2006-2007, online enrollments continued to grow at rates far in excess of the total higher education student population, albeit at slower rates than for previous years. Almost 3.5 million students were taking at least one online course during the fall 2006 term; a nearly 10 percent increase over the number reported the previous year. The 9.7 percent growth rate for online enrollments far exceeds the 1.5 percent growth of the overall higher education student population. Nearly twenty percent of all U.S. higher education students were taking at least one online course in the fall of 2006.

In Nigeria, National Open University of Nigeria (NOUN) has offered admission to thousands of students who are qualified but are not admitted through Joint Admission and Matriculation Board due to non-availability of space. The popularity of NOUN is widely spread all over the globe.

Definitions of Distance Learning

Distance learning, sometimes called e-learning, is a formalised teaching and learning system specifically designed to be carried out remotely by using electronic communication. Because distance learning is less expensive to support and is not constrained by geographic considerations, it offers opportunities in situations where traditional education has difficulty

operating. Students with scheduling or distance problems can benefit, as can employees, because distance education can be more flexible in terms of time and can be delivered virtually anywhere.

It could also be for the purposes of the Commission on College's accreditation review, distance education is a formal educational process in which the majority of the instruction (interaction between students and instructors and among students) in a course occurs when students and instructors are not in the same place. Instruction may be synchronous or asynchronous. A distance education course may use the internet; one-way and two-way transmissions through open broadcast, closed circuit, cable, microwave, broadband lines, fiber optics, satellite, or wireless communications devices; audio conferencing; or video cassettes, DVDs, and CD-ROMs if used as part of the distance learning course or program.

Distance Learning (DL) is an instructional delivery system that connects learners with educational resources. DL provides educational access to learners not enrolled in educational institutions and can augment the learning opportunities of current students. The implementation of DL is a process that uses available resources and will evolve to incorporate emerging technologies.

Several key features define distance learning. The importance of the teacher learner communications cannot be overstated. These include:

- the separation of teacher and learner during at least a majority of each instructional process;
- separation of teacher and learner in space and/or time;
- the use of educational media to unite teacher and learner and carry course content;
- the provision of two-way communication between teacher, tutor, or educational agency and learner; and
- control of the learning pace by the student rather than the distance instructor.

Better still; DL is education that takes place via electronic media linking instructors and students who are not together in a classroom.

Types of Distance Learning

There are two distance education delivery system categories - synchronous

and asynchronous. **Synchronous instruction** requires the simultaneous participation of all students and instructors. The advantage of synchronous instruction is that interaction is done in "real time" and has immediacy. Examples include interactive telecourses, teleconferencing and web-conferencing, and Internet chats.

Asynchronous instruction does not require the simultaneous participation of all students and instructors. Students do not need to be gathered together in the same location at the same time. Rather, students may choose their own instructional timeframe and interact with the learning materials and instructor according to their schedules. Asynchronous instruction is more flexible than synchronous instruction, but experience shows that time limits are necessary to maintain focus and participation. The self-paced format accommodates multiple learning levels and schedules. Examples of asynchronous delivery include e-mail, listservs, audio cassette courses, videotaped courses, correspondence courses, and WWW-based courses.

It is noted that distance education is complex to design and deliver (Berge 2004), and not necessarily less expensive than traditional forms of education. Still, there are a dozen benefits of distance education and training to organisations other than the purely economic, such as reduction in the amount of worker time spent away from the job, content that can be updated more easily resulting in better quality; and it allows organisations to obtain, manage, and disperse knowledge quickly throughout their enterprise (e.g., Kruse 2003; Massy and Zemsky 2003; ThinQ Research Department n.d.; W.R. Hambrecht & Co. 2001). Those who implement and set policy for distance education must balance the challenges against the benefits.

History of Vocational Technical Education in Nigeria

Vocational and technical education in Nigeria has a chequered history'. Given its humble beginning, this aspect of education was misunderstood by educators in the larger society. Conceptually, educators could hardly differentiate between the terms vocational and technical education, while society had been led to believe that vocational education is for those who are incapable of pursuing academic programmes. Against this background, vocational and technical education has made slow progress from its earliest times to date. For the purpose of clarity, vocational education is that 'skill-

based programme designed for sub-professional levels and is based on a specific vocation'. Technical education, on the other hand, facilitates the acquisition of practical and applied skills as well as basic scientific knowledge. The major difference between the two terms is that, whereas vocational education is designed for a particular vocation, technical education does not target any particular vocation but gives general technical knowledge. Thus, while every vocational education programme is technical in nature, not all technical education programmes are vocational. This subtle relationship accounts for the inter-changeable use of both terms in academic literature.

If we take Nigeria as an example, vocational education programmes are offered at the technical colleges while the polytechnics offer vocational and some technical education courses at the ordinary national diploma level. As part of the improved fortunes of vocational education, the current National Policy on Education (1998) has accorded a section to it clarifying its objectives with respect to the entire education system. Furthermore, the country's increasing unemployment has helped to highlight the need for vocational education (Oranu, 2000).

Problems of Distance Learning to Vocational and Technical Education

Despite the promises and obvious advantages to distance learning, there are problems that need to be resolved. These problems include the quality of instruction, hidden costs, misuse of technology, and the attitudes of instructors, students, and administrators. Each one of these has an effect on the overall quality of distance learning as a product. In many ways, each of these issues relates to the others. We will examine each of these issues separately.

Quality of Instruction

The first issue is the quality of instruction that is given through distance learning programs. Much of the quality of instruction depends on the attitude of the administration and the instructor. Data collected in a 1999 study by Elliot Inman and Michael Kerwin showed instructors had conflicting attitudes about teaching distance education. They report that after teaching one course, the majority of instructors were willing to teach another, but that they rated the quality of the course as only equal or lower quality than other

classes taught on campus. Many times it seems that the administration believes the technology itself will improve the quality of the class. Palloff and Pratt (2000) remind us that “technology does not teach students; effective teachers do”). They make the point that the issue is not technology itself, but how it is used in the design and delivery of courses. Too often instructors do not design their lessons to take advantage of the technology presented. This affects the quality of the instruction. Research suggests that the effectiveness of distance learning is based on preparation, the instructor’s understanding of the needs of the students, and an understanding of the target population (Omoregie, 1997). Sherritt (1996) found in her survey of higher education administrators that many of the decision makers view distance programs as second rate, a “necessary but deficient form of education”. She writes that this attitude also was found in academic departments that “have no strong mandates to adjust their curriculum and instruction to fit distance learning beyond cursory cooperation.” There are no rewards for doing so and the effort takes away from research time. Sherritt also cites a study by Caffarella *et al.* done in 1992, which found off campus instructors to be “a demoralised bunch, perceiving poor working conditions, and isolation, personal and professional deprivation.” This attitude hardly seems conducive to an effective learning environment for the students. If the administration and instructors are lacking in true commitment, it is bound to have a negative influence on the entire distance learning experience.

Hidden Cost

The cost savings associated with distance learning in general are even more pronounced in the case of web-based learning. Most estimate the savings at over 50% over the in-class variety. For example, at a Toyota plant in the United States the company saved 60% of the cost of an in-pers alternative on a work procedure training course (e-Learnity, 2002). In an effort to improve teaching in finite mathematics, Iowa State University implemented an online interactive version of the course and brought down the cost per student from \$ 129 to \$77 without sacrificing quality (Love et al., 2006).

Attitudes of Instructors

The increased importance of information and telecommunications technology (ICT) for the delivery of vocational training was underscored at the Second International Congress on Technical and Vocational Education

convened by UNESCO in Seoul in April 1999. The central theme of the Congress was the strategic role that (TVET) Technical Vocational and Training must play in enabling individuals and societies, particularly in the developing world, to adapt to and manage the accelerating effects of globalisation, technological and social change. There was also broad recognition of the urgent need for reform of TVET systems to ensure expanded access, flexibility, relevance, and efficiency. The relatively high costs of traditional TVET systems combined with extremely constrained financial resources within most developing countries led conference participants to conclude that the informed use of learning technologies is essential: There is a need to find alternative methods of delivery of instruction for TVET.

Teaching institutions and teachers should be reoriented to use flexible teaching and learning materials. Some of these should include the development of modularised curricula and assessment methods; the development and use of appropriate technologies for instruction — online services and training materials, computerised learning packages, use of CD- ROMS, intranet and internet, etc.”

Instructors and lecturers also face various challenges in achieving effective web-based teaching. Most faculty view e-learning as potentially positive. They see the possibilities of innovation, to improve teaching, reach more students, and achieve some of their own teaching and professional goals (Rockwell et al, 1999). However, they remain wary of several issues that could have an effect on their ability to teach their online and other courses, their ability to continue doing research, or the quality of web-based courses. A preliminary concern of some faculty is the time required to learn the new technology or to manage an e-course (Rockwell *et al.* 1999; Valentine, 2002). They are also concerned about the support and rewards from their administration and the institution. Sometimes it is not clear to faculty that their administration is fully behind an e-learning initiative (Rockwell *et al.*, Valentine, Nichols).

Attitudes of the University Administrator

University faculty members are also aware of the complexity of designing effective web-based and blended courses (Buchanan, 2004; Nichols, 2008;

Rivera & Rowland, 2008; Valentine, 2002; Sherry, 1996; Poley, 2008; Jain, 2003). A well-designed course today must promote active learning, peer-to-peer interaction, interactivity between teacher, learners, and the material (Hutchings *et al.*, 2007). Because of rising expectations, a course must also incorporate visual and other media content and perpetuate a good level of variety. Rapid teacher feedback is essential for student satisfaction and for overcoming the absence of face-to-face time between teacher and learner (Rivera & Rowland, 2008; Hutchings *et al.*, 2007; Edirisingha, 2009).

At the same time, distance education has some serious drawbacks, even in its application in advanced industrial countries. These include its cost and capital intensiveness, time constraints and other pressures on instructors, the isolation of students from instructors and their peers, instructors' enormous difficulty in adequately evaluating students they never meet face-to-face, and drop-out rates far higher than in classroom-based courses.

Many of these fundamental problems are reproduced when distance programmes are exported to developing countries. The social impact of technological change is difficult to predict or foresee. Often, far from improving the quality of life or expectations of the powerless and the poor, the application of technology functions in strange and unexpected ways to reinforce the worst problems of inequality. The digital divide that polarises the technological "haves" and "have-nots" separates the "wired world" from that without access to this technology, and, within developing countries, those who have the requisite levels of literacy and computer skills to make use of the Internet and other communications technologies from those who do not. Income, education, age, ethnicity, language and gender separate people who have a reasonable hope of making use of electronic communications from those who have little or no hope whatsoever.

Role of ODL in Technical and Vocational Education Technology

Open and Distance Learning (ODL) is increasingly becoming popular because of its flexibility and learner friendly approach. Open learning in vocational education has much to offer the world of work because it is responsive, flexible, promotes independent learning, can be set up in a way that fosters teamwork as well as individual achievement and the immediate transfer of skills in the work setting, particularly to those who could not get

access to the formal education system. Distance education is more costs effective and can take place while continuing full-time employment (Moran and Rumble, 2004). People who live in remote areas find that ODL permits them to enroll in programmes, which otherwise would not be available to them. Keeping this in mind National open university of Nigeria (NOUN), Centre for Life-Long Learning is offering many programmes which are in the category of vocational and technical education and continuing education for the improving skills capacity building of adult learners. Such programmes include Certificate in Computer Literacy, Call Centre Skill, Mobile Phone Repairs and such. This programme provides effective and efficient services in the aforementioned sectors.

This is highly skill oriented programme and involves intensive practical work. Workplace learning is also expanding rapidly in organisations, boosted by online learning opportunities. Web-based training or E-training, an innovative approach to distance learning, can be effectively utilised for delivering knowledge to individuals anywhere in the country. If the developing countries want to enhance their international competitiveness for the well-being of their people, they must address the concerns for vocational education and training. The path for economic development and prosperity through the skills training and ODL as the modality for vocational education and training allows vast number of people, hitherto unreached to take advantage of education and training opportunities (Mishra, 2002). The changing skills demands due to competition a sector for developing skills attuned to the needs of the society. All this can be not achieved by formal system. Still, there are a dozen benefits of distance education and training to organisations other than the purely economic, such as reduction in the amount of worker time spent away from the job, content that can be updated more easily resulting in better quality, and it allows organisations to obtain, manage, and disperse knowledge quickly throughout their enterprise (e.g., Kruse 2003; Massy and Zemsky 2003; ThinQ Research Department ri.d.; W.R. Hambrecht & Co. 2001). It increases the current and anticipated demands for rapid and efficient workforce preparation. ODL institutions are not only imparting education as an alternative to the formal system i.e. education in conventional courses/programmes, but also in areas such as vocational and technical, and continuing education, teacher education and even in high technology based education (UNESCO, 2002 and Bourne et al,

2005). Open distance learning has also made some contributions in vocational and technical education (Mehrotra & Sacheti, 2005). The vocational and technical education is one of the important issues of Human Rights.

Over 90 percent of employment in India is in the 'informal' sector, with employees working in relatively low productivity jobs. Provision of appropriate skills may thus be an important intervention to increasing the productivity of this workforce. This sector cannot approach the formal system. Here open and distance learning mode institution can play important role by providing flexible and cost effective vocational education. For example, the National Institute of Open Schooling (NIOS) (offering 85 courses through over 700 providers recognised by the NIOS). Similarly, IGNOU along with some other Open Universities also offering successfully many programmes of vocational in nature. Presently, IGNOU lays much emphasis on skill, capacity building, training, employability, life-long education and continuing education. Open and Distance Learning (ODL) system now is recognised and accepted as an important mode for achieving many of these targets. In addition to contributing to social and economic development, ODL plays a decisive role in the creation of a knowledge-based society.

The following goals are integral to the mission of NOUN

1. To continually change, improve, and ensure the effectiveness of the university's programmes in preparing students for successful careers.
2. To engage and maintain a competent, qualified faculty that possesses current technical and professional knowledge and experience, engages in ongoing professional development, and has the ability to convey this knowledge to students.
3. To improve students' written and verbal competencies as well as analytical and technical skills prior to graduation.
4. To provide facilities that support educational programmes and enable students to develop profession specific skills.
5. To engage and maintain a staff that is caring and provides support for students and meets their educational goals and objectives.
6. To attract qualified students of diverse backgrounds.
7. To provide a collegiate academic atmosphere that encourages open

exchange of ideas.

8 To offer comprehensive distance learning programmes to more fully meet the educational and training needs of citizens and industry.

9 To engage graduate faculty in research that serves to improve teaching and learning.

10 To engage in programmes and activities that provide community service aligned with the university's mission.

Conclusion

From this presentation, it is noted that Distance Learning and its relationship to emerging computer technologies have together offered many promises to the field of education.

Distance education began in the early 1700s through the correspondence model based on print media technology such as news articles, flyers and, ultimately, the mail sendee. It grew in importance by the use multimedia model based on audio and video technologies as well as print. The third was the tele-learning model based on applications of telecommunications technologies to provide opportunities for synchronous communication. The fourth was based on online delivery via the Internet while the fifth generation of distance education is essentially a derivation of the fourth generation, which aims to maximise the current capabilities of the Internet and the World Wide Web.

Two types of modes of instructional delivery were identified, namely: synchronous instruction requires the simultaneous participation of all students and instructors and the asynchronous instruction which does not require the simultaneous participation of all students and instructors.

Distance learning had some problems which include the quality of instruction, hidden costs, misuse of technology, and the attitudes of instructors, students, and administrators.

It concluded by highlighting the roles of distance education to the growth of technical and vocational education in Nigeria.

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