Pakistan Journal of Social Sciences 5 (6): 521-526, 2008
ISSN: 1683-8831

Distance Education, Information and Communication Technology (ICT) and Workers' Productivity

M.A. Ayeni
Department of Educational Foundations and Anagement, Faculty of Education,
University Ofado-Ekiti, Nigeria

Abstract: Distance Education as a concept is a generic term that includes the range of teaching/learning strategies used by correspondence colleges, Open Universities, distant learning departments of conventional colleges or Universities and distance training units of corporate providers. It is a term for the education of those who choose not to attend the schools, colleges and Universities of the world but study at their home or sometimes their work place. Information Communication Technology (ICT) on the other hand is generally regarded as the superhighway through which information is transmitted and shared easily by people all over the world for the purpose of learning and teaching. This study examines how distance education through information communication technology can enhance workers' productivity for the development of a virile and highly sustainable economically independent society. It equally intends to explicate and give a critical examination of distance learning and teaching vis-à-vis Information Communication Technology and their relevance to workers' productivity in the development of a developing nation.

Key wrods: Distance education, information and Communication technology, open universities, Nigeria

INTRODUCTION

Most organized formal education is carried out in classrooms or lecture halls with an individualized teacher in person imparting knowledge and skills to a group of students. It is oral and group-based. The education imparted by such means depends on the availability of teachers at appropriate pupil/teacher ratio in appropriate building. The above statement proposes that the basis for theory of distance education is to be formal within general educational theory but not within the theoretical structures of oral, group-based education. This is because distance education is not based on face-to-face inter-personal communication and is characterized by a privatization of institutionalized learning. As a matter of fact anyone professionally involved in education must presume the existence of 2 forms of instruction which are strictly separable that is: traditional face-to-face teaching based on interpersonal communication and industrialized teaching which is based on technologically produced interaction.

Distance Education is seen as a generic term for special field of education which is specifically meant for those who choose not to attend schools on regular basis. It is a globalised programme that is practiced all over the world. For example in France, according to Henri and Kaye (1985), it is referred to as "enseignement" in Germany, it is called "fernstudium". In Spain it is called "instruzione" And of course among the Yorubas of Nigeria, it is called "Aletile". From the above, it can be seen that this form of education crosses the sectoral boundaries into which the study of education is normally divided. The conception of distance education connotes students' education at a distance, further education at a distance for vocational qualification, that is distance training, higher education at a distance for university qualification, that is university level distance education like the ones across Nigeria and other developing nations.

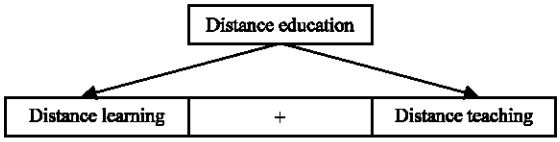
The term distance education subsumes a number of existing terms but not all are synonymous. Examples of these terms are correspondence education or correspondence study, home study, independent study, external studies distance teaching or teaching at a distance; distance learning or learning at a distance.

Distance teaching or teaching at a distance: These 2 terms though seem to be the same have been used as a characteristic of this form of education. Distance teaching in particular is seen as those teaching methods in which, because of the Physical separation of learners and teachers, the interactive (that is simulation, explanation, questioning guidance) as well as the proactive phase of teaching (that is selecting objective planning curriculum and instructional strategies) is conducted through print,

mechanical or electronic devices. Distance teaching indicates the process of course development by which a distance institution prepares learning materials for students. In the same way, wide currency has been given to the term 'distance learning' or learning at a distance which is students-based as an overall term and would tend to ignore the role of the institution, so distance teaching is too teacher-oriented and places all the emphasis on the institution.

Distance learning or learning at a distance: The term distance learning has come to be used as a global term for the use of electronic technologies in distance education. According to Keegan (1993), it is generally used to cover audio conferencing, audio graphics, teleconferencing, business television, video conferencing, 2-way interactive video and also desktop video conferencing. From the above categorization one would see that the use of information communication Technology had started long time ago but it is just been orchestrated and publicised now in Nigeria.

The relationship of distance teaching and distance learning may be illustrated graphically thus:



The term distance education indicates well the basic characteristics of the separation of teacher and learner, which distinguishes it from conventional, oral group based education. It also encompasses well the 2 characteristics operating systems which are the course development subsystem (distance teaching) and a student support subsystem (distance learning).

Distance educators in the past have held on to terms like correspondence or home study, for example exam success correspondence college in Lagos, because, it was claimed, they were comforting to students. There is every evidence that citizens of this century are coping with distance learning in a way previous generations could never dream of. Even, Sewart (1981) asserts that students too, are coming to choose distance learning rather than backing off from it. Perhaps the main problem with the term is that it tends to mask the fact that many students in distance systems are city dwellers and that it is the distance between the teaching acts and the learning acts that is crucial, not the magnitude of the geographical separation of teacher and learner. It is highly imperative to say whether distance education is to be regarded as the same as or different from a University without walls, extramural studies, experiential learning, off-campus education, open learning, extended campus or University extension. It is equally seen as the process by which communication between the teacher and the learner is facilitated by print, electronic, mechanical or other devices: thus the role and the function of Information Communication Technology (ICT) in this respect becomes imperative. As a matter of fact, one can convincingly say that the opposite of 'distance education' is 'direct' education or face-to-face education, a type of education that takes place with direct contact between lecturers and students. From the above, it is now seen that the separation of teacher and learner is fundamental to all forms of distance education, whether they be print-based, audio/radio based, video/television based, or computer-based. As stated earlier this separation differentiates distance education from all forms of conventional, face-to-face direct teaching and learning. The structuring of learning materials and the linking of these learning materials to effective learning by students through an educational organization also differentiates distance education from other forms of education. This corroborates Moore (1973) assertion that distance education is all arrangements made for providing instruction through print or electronic communications media to persons engaged in planned learning in a place or time different from that of the instructor. In the same vein, Portway (1983) was of the opinion that distance education is the teaching and learning situations in which the instructor and the learner or learners are geographically separated and therefore, rely on electronic devices and print materials for instructional delivery.

Distance education is a form of education characterized by the quasi-permanent separation of teacher and learner throughout the length of the learning process, it is equally characterized by the use of technical media-print audio, video and computer through internet to unite teacher and learner and carry the content of the course, it ensures provision of 2-way communication so that the student may benefit from or even initiate dialogue. It is equally characterized by the quasi-permanent absence of the learning process so that people are usually taught as individuals rather than in groups: The linking of virtual classrooms by satellite, full bandwidth compressed video or microwave links enables much of the content of a course to be taught at a distance.

Amundsen (1993) was of the opinion that distance educations is a planned and systematic activity which comprises the choice, didactic preparation and presentation of teaching materials as well as the supervision and support of student learning and which is achieved by bridging the physical distance between

the students and teacher by means of at least one appropriate technical medium. In our examination of this concept, one could see that the theoretical underpinnings of distance education are to be found within general education theory. Distance education in the real sense, as stated earlier, is more industrialized form of education but its practice shows that the educational activities are dominant. However, it must be noted that the central theme in the study of distance education was the justification of the abandonment of interpersonal, face-to-face communication, previously considered a cultural imperative for education in all civilizations in favour of what Peters (1972) considered an a personal, mechanical or electronic communication created by the technology of industrialization. The challenge which distance education attempts to take up does not lie in the teaching-learning relationship but in the way in which this relationship is achieved in the light of distance factor. The real challenge lies in the fact that in distance education one has to re-create at a distance the teaching-learning relationship; one has to put in place from a distance an educational environment in the students' normal living milieu; that from a distance one has to plan, develop and dispense what is to be taught without the possibility of modifying it in accordance with students needs. It needs to be emphasized and categorically stated here that open and distance learning is becoming an increasingly valued component of most national education provision. The 1990s, also saw the arrival of exciting new communication media making it possible for the first time in history, electronically to teach face-to-face at a distance in virtual classrooms.

Having said a lot on distance education, it is now reasonable to examine the concept of information communication Technology, popularly known as ICT.

INFORMATION COMMUNICATION TECHNOLOGY (ICT)

In the late 20th century, interest has increased in the use of electronic network to support distance learning around the world by enabling computer-media conferencing and collaborative learning to take place and providing access to electronics libraries and to the Multi-media education market (Panos, 1998). This system unequivocally metamorphosed into superhighway electronic system called ICT.

Information Technology seems to incorporate a wide range of technologies like Telephone computer word processing applications, web browsers and servers and full text document databases and mainframe computers.

Information communication technology is simply about sharing and having access to data with ease. It is generally regarded as the superhighway through which information is transmitted and shared by people all over the world. As Bandele (2006) asserts, ICT is believed to be the scientific methods of storing and processing information and correspondingly sharing, exchanging and sending or moving such information from one place to the other. The above statement has clearly made relevant the relationship between distance education or education at a distance and the ICT. The Information Communication Technology encompasses the use of computers, auxiliary equipment, software, hardware services and resources interconnected together to form network, that is used in the automotive acquisition storage, manipulation, management, movement, control, display interchange, transmission or reception of information.

It has been commonly accepted and proven that Information and Communication Technology (ICT) is the engine of the 21st century and beyond. It is believed that this new phenomenon is going to chart the economic, religious, cultural and social life of nations. Aaron's (2004) opined that (ICT) it is undoubtedly going to open doors of possibilities and opportunities for nations and their people and yet in the same breathe, confine nations that are not effectively put in the matrix of the global information order in cocoons. Considering the above, one would not be making any mistake by conducting a marriage of compatibility between distance education and Information Technology (ICT).

Distance education and information communication technology juxtaposed: For effective teaching and learning process at a distance, the use of ICT becomes imperative, now that the whole world has become a global village. It is now not uncommon for someone to stay in Nigeria and study at Oxford University and get a degree certificate through the use of ICT. This phenomenon (ICT) allows for repetitive operations in a distinctly and explicitly defined manner. It is accurate, fast and reliable and has the capacity to store large information. This singular function makes ICT an indispensable instrument not only for distance education but equally for social change. As Bandele (2006) asserts, ICT is a revolution that involves the use of computers, internet and other telecommunication technology in every aspect of human endeavour. It is equally believed that the computer and Internet have a more direct relationship to fundamental changes in human communication and cognition and the overall organization of the economy and the society.

Distance education presents a cluster of educational efforts to replace the interpersonal communication of the conventional education system by printed electronic or computer based interaction because the interpersonal communication of conventions education is by definition, excluded except for occasional sessions or meetings. The vital question to ask here should be, is distance education a contradiction in terms? If teaching-learning relationship is one of inter-subjectivity and basically a group experience in which much is learned by association with those who have the qualities to be learned-can this take place at a distance? It is true that the separation of the teaching acts and the learning act that is characteristic of distance education brings about a weak integration of the student into the life of the institution and this has been linked to drop-out. It is equally true that the separation of teaching acts and the learning acts that is characteristic of distance education places distance education among the non-traditional forms of education in which degrees, diplomas and qualifications achieved may not receive full academic acceptance. It is also true that the separation of teaching acts and the learning acts that is characteristics of the distance education brings about weaknesses in the achievement of interpersonal communication between teacher and student and this has been linked to the low quality of the learning achieved. Inspite of the above listed fear and shortcomings of distance education, it had been discovered that the advent of Information Communication Technology which deals with the acquisition, processing, storage and dissemination of vocal, pictorial textual and numeric information by a micro-electronic based combination of computing and telecommunication has been able to remediate the separation phenomenon that served as hydra-headed problem to distance education.

INFORMATION COMMUNICATION TECHNOLOGY AND WORKERS' PRODUCTIVITY

Since, ICT is a factor in reorganizing and resuscitating the economy of any nation, then workers' productivity through the system becomes inevitable. And also, since the computer is the unique resource for ICT supported with auxiliary equipments, its application to work is more than improving the productivity but has been about transforming the working force. This involves overcoming traditional working approaches and supplanting them with revolutionary new paradigms of workers disposition to work. Hence the economic and political survival of any nation in the 21st century cannot be detached from the ICT which forms the bedrock of any national development. It is on the basis of this that Andrew (2003) held the opinion that business concerns, individuals, companies, organisations and institutions that want to carve a riche for themselves, that want to be at par with their peers worldwide, that want to be highly productive will need a lot of data and information not only to take decisions at their work, but also exchange of resources and data.

The introduction of Information Communication Technology (ICT) into working capacity of factory worker becomes an antidote to effectively solving the problems that would have been difficult if not impossible to solve via human thinking and effort. It must be noted however that all accessories of ICT like the computers and telecommunication facilities are use right from the time policies are being proposed till the final outcome of such policies. Decision alternatives are modeled into programmable bits with the computer assisting in prioritizing viable alternatives and reordering policy directions. Information storage and retrieved and relevant decision making processes are also accomplished with the use of computer. Equally important is the fact that payrolls and staff personnel records are processed with the use of computers. Also computerized laboratory equipments enhance workers' productivity by making jobs easier and performance more effective. The coming around of ICT in this millennium would undoubtedly keep workers abreast the latest development in the world of work because it is seen as a major driver of development. Equally important is the internationally acceptability of the products from our factories and companies. The involvement of ICT in our production process would enhance our workers' ability to manufacture and produce commodities and stuff of international quality which is going to guarantee global acceptability and recognition. The currency of the products and their taste for international consumption is a key towards making our nation economically sustainable.

It is however, undoubted fact that workers anywhere in the world need ICT to enhance their skills and keep abreast of the global developments in their various professions and of course the workers in Nigeria especially would no doubt be ranked among the best in the world if they can take full advantage of the opportunities provided by computers in the ICT age. This submission seems to be true because through this system the workers would be fully equipped to handle the challenge of the modern world. For example, introducing ICT to hospitals would as a matter of fact safe millions of productive lives and significant improvement is surely to be recorded in health care delivery. This submission buttress Panos (1998) assertion that ICT has made great impact on health care, most especially in developing

countries. According to him, one of such example is health let which links health care workers in 16 African countries and 4 Asian countries with one another and with colleagues and databases in developed countries using a variety of communication protocol. Through this, information are passed to and fro one countries to another concerning diseases or the other, helping in controlling and treatment of such diseases, thus, it is hoped life expectancy of workers is likely, to increase thereby enhancing high level of productivity and marketability. As a matter of fact, the position of ICT in the overall development of any nation cannot be underestimated; it is lamentable, that Nigeria, a country that is approaching fifty years of existence as an independent nation, is still in the process of learning democracy, clamouring for transfer of technology, struggling for economic survival, political stability, religious tolerance and social upliftment. The incoming of Information Communication Technology (ICT) would serve as an engine of rapid development in all ramifications where Nigeria is presently lacking. One agrees with Aribisala (2006) when he says, that ICTS are increasingly playing an important role in oranizations and in society's ability to produce access, adapt and apply information. They are however being heralded as the tools for the post-industrial age and the foundations for a knowledge economy due to their ability to facilitate the transfer and acquisition of knowledge. This is done by linking up people through computer systems. ICT therefore makes possible the concept of electronic commerce which, according to Ogunrinde (2006) is becoming more widely spread internationally. Workers workloads are reduced, productivity in all spheres of the economy improved, workers are relieved of their tedious tasks, more time are now allowed for thinking and greater opportunities for innovation are encouraged. Thus every Nigerian, including the bricklayers, carpenters, gold smith and even market women, have immense benefits to derive in Information Communication Technology. The system, according to Ogunrinde (2006) is going to offer the less developed nations like Nigeria the opportunity to leapfrog the industrialization stage and transfer their economies to high value added information economies that can compete favourably with advanced economies on the global market.

Equally important is the fact that ICT would undoubtedly change the scope, pace, range as well as the procedure of financial services delivery not only in Nigeria but worldwide. The challenges posed by this new system in the operations of our banking system are however overwhelming (Doyle, 2003). It has significant effect not only on the Banking system but equally on other spheres of the economy especially in terms of workers' productivity, cost reduction, enhanced speed at carrying out operations, introduction of many computer aided product, improvement in the transactions in the nations capital market. Also important is the fact that, for workers to continuously create and add value to corporate results, they require up-to-date specialized skill, information and materials which are readily available through the use of Information Communication Technology.

CONCLUSION

Distance education, Information communication Technology and workers productivity had been the focus of this study. The study sees distance education as a generic term that is used to describe the range of teaching/learning strategies being employed by correspondence colleges, Open University systems, distance department of conventional colleges or Universities and distance training units of corporate provides. It is basically used for the education of those who choose not to attend schools on regular bases but prefer to do it at their various homes or different places of work. The system is characterized by the Physical separation of the teachers and the students. This initially brought some weaknesses and several shortcomings on the part of the programme. But with the introduction of Information Communication Technology (ICT) which is basically concerned with the sharing, managing, transmitting and disseminating information with the fastest measure of communication to all parts of the world, the envisaged pseudo-weakness and shortcomings attached to the programme are now evaporating.

The study had however attempted to examine these pseudo problems such as drop-out, non-acceptability of the degrees, diplomas and qualifications achieved through the system and envisaged poor quality of the learning achieved and how the introduction of ICT by the government has now become the antidote to these problems.

It was also discovered that for any nation to survive in the 21st century, the acceptance and funding of ICT become imperative. It is even more important to developing nations like Nigeria where admission struggle into tertiary institutions becomes a hydra-headed phenomenon. Distance education through the use of ICT is believed to solve, at least to a reasonable extent Nigerian admission problems, since over 250,000 students could be admitted at a goal and in a year and the quality and the adequacy of the knowledge acquired would still remain like those of conventional schools.

In the area of workers productivity, the study posited that, Information Communication Technology has come to play a significant role in all ramifications, for example in the banking system, health care delivery factories operations and even educational institutions. The role of ICT in the area of automative acquisition, storage, manipulation, management, movement transmission or reception of information vis-à-vis its application makes the system an innovative driving force of the 21st century civilization.

REFERENCES

Aaron, U., 2004. Icons of information communication and technology in Nigeria, Lagos: Eskede Ventures Ltd.

Amundesen, C., 1993. The Evolution of Theory in Distance Education. In: D. Keegan (Ed.). Theoretical Principles of Distance Education, London: Routledge, pp: 61-79.

Andrew, M., 2003. Computer and information technology evolution. New York: Lynda Harvey and Associates.

Aribisala, J.O., 2006. Role of information and communication technology in globalization. In: Agagu A.A. (Ed). Information and Communication Technology (ICT) and Computer applications, Abuja, Panof Press, pp: 68-76.

Bandele, S.O., 2006. Development of modern ICT and internet system. In A.A. Agagu (Ed) Information and Communication Technology (ICT) and computer application. Abuja: Panof Press, pp: 1-3.

Doyle, S., 2003. Information communication and technology for you (OCR). UK: Nelson Thornes Ltd.

Henri, F. and A. Kaye, 1985. Le savour a domicile. pedagogie et pmroblematique de la formation a dislance; Quebec Teleuniversite, pp: 79-92.

Keegan, D., 1993. Rentegration of the Teaching Acts. In: Keegan D. (Ed). Theoretical Principles of Distance Education, London, Routledge, pp: 143-169.

Moore, M., 1973. Toward a theory of Independent Learning and teaching. J. Higher Edu., 44: 66-79.

Ogunrinde, R.S., 2006. Application of Information Technology. In: Agagu, A.A. (Ed). Information and Communication Technology ICT and computer applications Abuja Panof Press.

Panos, 1998. The Internet and Poverty. Panos Media Briefing No. 28 London, The Panos Institute.

Peters, R.S., 1972. The Concept of Education. London, Routledge a Kegan Paul, pp: 67-74.

Portway, M., 1983. The Individual Adult Learner. In: Tight, M. (Ed.) Adult learning and Education, London, Croomttelm, pp: 142-59.

Sewart, D., 1981. Distance teaching, a contradiction in terms? Teaching at a Distance, pp: 8-18.