

**ICT APPLICATION AND UTILIZATION FOR DISTANCE
AND OPEN LEARNING EDUCATION AT THE NATIONAL
OPEN UNIVERSITY OF NIGERIA (NOUN)**

Aramide, Kolawole A.

*Junior Research Fellow
Abadina Media Resource Centre
University of Ibadan, Nigeria
kolaramide@yahoo.com*

and

Ayankola, Ibrahim A.

*Librarian II
Federal University of Technology, Akure
Nigeria
ayan4_u@hotmail.com*

Abstract

This study examined the extent of ICT application and utilization for distance and open learning education at the National Open University of Nigeria (NOUN). The descriptive survey research method was adopted for the study while questionnaire was adopted as major instrument of data collection. A total of 113 copies of questionnaire were administered out of which 87 copies were returned with useful responses. The findings revealed radio, computers, televisions, video cassettes/VCDs and audio cassettes/CDs as the most commonly available ICT facilities at NOUN while Telephone, photocopier and computers are the most utilized ICT facilities for the open and distance learning by NOUN staff. The findings further revealed the areas of ICT application at NOUN to include online application for admission, online registration, administrative functions, online submission of results and digitization of student's record. Most of the facilitators at NOUN

are not competent in the use of ICT facilities while constraints such as poor power supply, lack of adequate skilled staff, lack of fund, high cost of maintaining ICT facilities and high cost of purchasing ICT facilities inhibit effective application and utilization of ICT facilities for the open and distance learning at NOUN.

It is recommended that adequate infrastructure to support ICTs application in Open and distance learning at NOUN should be made available while the facilitators and other NOUN staff should be trained in the use of ICTs.

Background to the Study

Distance education is a response to the provision of educational opportunities for mature students and other people who do not have the opportunity of attending any of the regular educational institutions established. It is designed to fill the gap, which the conventional face-to-face education cannot fill. It is a common knowledge that the Nigerian conventional university system and other forms of formal higher education cannot accommodate all those seeking University admission in Nigeria (Jegade, 2003).

The term “distance education” cover the various forms of teaching and learning at all levels which are not under the continuous, and immediate supervision of tutors present with their students in lecture rooms or in the same premises but which nevertheless benefit from planning, guidance, and tuition of the staff of a residential organization (Tunmann, 1996). It is a programme designed to give educational opportunities to the less privileged education-wise.

According to Moore (1997), distance education is a system based on selective use of instructional media, both traditional and innovative that promotes the self-teaching-learning process to achieve specific educational objectives with potentially greater geographical coverage than traditional face-to-face system of education. Egunyomi (2001) also defines distance education as the organization and delivery of instructions to learners

who do not have in site, physical, close and immediate interactions with their teachers. It consists of the mixture of learning through print, correspondence, electronic media instruction. World Bank (2004) sees distance education as a form of educational provision in which the instructor and students are separated by time, location or both. It has the advantage of, overcoming the constraint of time and location, making the best use of limited numbers of teachers and experts available, enabling greater and more equitable access to educational resources and expanding limited number of places available for students.

Distance education is usually designed to be equivalent in standard and content to corresponding programs delivered in conventional face-to-face classroom teaching environment. The program requires courses to be completed within a set period. Distance education designs appropriate courses, learning methods and delivery system identified for any target group (Umoru-Onuka, 2002). It affords those who could not afford/access education due to one reason or another in the past the opportunity to do so through distance education. This is made possible because it is a type of education that allows one to study and work at the same time, because of the flexibility of its programme and time table which can be adjusted to fit into individual students plan rather than the rigid time table used in the formal education setting.

The role of information and communication technologies (ICTs) in teaching and learning cannot be undermined as it is rapidly becoming one of the most important and widely discussed issues in contemporary education policy. ICTs have the potentials for enhancing students learning as the facilities provide teachers and students with vast quantities of information in an easily accessible, non-sequential format. Distance education demands the use of information and communication technologies (ICTs) for effective delivery, because the teachers and the learners are separated in location (World Bank, 2003). ICTs are essential for communicating as

well as make for interactive sessions with groups and individual student in distant locations (Mabawonku, 2004). Instruction delivery in distance education is usually through a variety of media including print and other information and communication technologies (ICTs). Many factors accounts for the use or non-use of ICTs in distance education. For instance, students from remote areas as well as some lecturers may not use ICTs because the facility is not available for them.

An effective distance education delivery system must enable free flow of information between students and their teachers. Information flow from electronic sources to the focus group must be guaranteed to complement the traditional sources. There must be communication between teachers and learners, which ICTs can facilitate.

In a developing country like Nigeria where the 'digital divide' is more the rule than the exception, delivering instruction through the distance mode presents a significant challenge to educators. Put simply, the introduction of ICT can alter and raise expectation among users and institutions alike. It is on the basis of this that this study intends to look into the extent of application and utilization of ICTs in distance education in Nigeria with focus on the apex Distance Learning University, the National Open University of Nigeria (NOUN).

Statement of Problem

An effective distance education delivery system must enable free flow of information between students and their teachers. This can be possible with the use of ICTs. Yet one is not sure of the extent of ICT application for Distance Learning Education in Nigeria. Thus, this study aims at investigating the extent of application of ICTs in the National Open University of Nigeria (NOUN).

Objectives of the Study

The purpose of the study was to determine the extent of ICT application and utilization for Open and distance education by the National Open University of Nigeria (NOUN). The specific

objectives include:

1. Identifying the range of ICT facilities available for use in distance learning education at the National open University of Nigeria, (NOUN).
2. Identifying the specific areas of ICT application for distance and open learning at NOUN.
3. Identifying the competency level of NOUN staff in the use of these ICT facilities
4. Identifying the constraints to ICT application in distance learning education in Nigeria.

Justification for the Study

This study is justified in the fact that it will attract the attention of stakeholders in the management of distance education delivery system. The study will also provide a useful guide for the National Universities Commission (NUC) in properly identifying the areas where emphasis should be placed in making recommendations as regards strategies to both the Universities involved in distance education, and the Federal Government in arriving at a policy framework with regard to promoting the use of ICTs in distance education.

Methodology

The survey research design method was adopted for this study. Data collection was done with the aid of questionnaire. Copies of the questionnaire were distributed to all the facilitators and administrative staff of NOUN at Lagos and Ibadan centres. There are 113 staff at both Lagos and Ibadan centers (NOUN handbook, 2007). Out of the 113 copies of questionnaire administered, 87 copies were returned with useful responses, giving a response rate of 77.0%. The returned questionnaires were analyzed and interpreted using the simple percentage and frequencies distribution.

Literature Review

ICT Application in Education

The demands of the knowledge economy have revolutionized the education sector, and formal education systems have become more versatile and flexible. The education system now is regarded as more “porous and permeable”. In the traditional education system, learning takes place mainly in the confines of the four walls of a classroom. In the new world order, characterized by abundance and ready availability of digital information, there is every reason to believe that information has become ubiquitous, and therefore can be obtained at any time, and in any location no matter the distance as long as necessary infrastructural devices and the skills to retrieve information from global information networks are available. Adeogun (2003) emphasized that ICTs have broken the barriers of time, distance and location, which have impeded the growth of formal education.

ICTs have given rise to new modes of organizing the educational environment at schools, new concepts of the teaching process, and recasting the role played by the participants in the education process. With the current development in ICTs, it may be difficult in the near future to differentiate between campus based education and distance education, (Nwizu, 2008). With the pace of day-to-day technological innovations, there has been a tremendous change in the whole education system.

ICT Application and Utilization in Distance Learning

There are wide variations in ICTs used in distance learning around the world. Tibay (2004) asserted that specific applications and combinations of these applications are very much shaped by the context of their target user populations. Distance learning is widely recognized as the method of choice for reducing costs, increasing flexibility, increasing access and increasing number of learners. Since distance learning relies on technology for delivery, there is also a challenge to provide

service to users and learners with limited access to technology (Siddiqui, 2007). Distance learning has the power to level the playing ground for rural and disadvantaged learners by providing a learning experience without walls or barriers. In order to achieve this, ICTs must be applied (Alausa 2006).

However, Alake (2005) believes that it will be more difficult reaching the learners who can benefit the most from distance learning if emphasis is placed on the use of high bandwidth, exotic equipment and dedicated facilities. Thus, to overcome the difficulty of reaching the learners, distance learning must embrace scalability and use of common infrastructure to provide effective learning as emphasized by Neal (2003) .

Furthermore, Mcharazo (2006) emphasized the importance of ICT in distance learning because it supports high quality information service network, which provides access to full range of learning and teaching materials in various formats. The success of any distance learning is measured in terms of ability to provide adequate resources and materials, including non-print materials and audio-visual materials such as radio, television, video recordings, telephone, Computers, Video conferencing and teleconferencing facilities, CD-ROMs and the Internet resources. However, these resources are limited, partly because of inadequate funding.

Mmari (1997) emphasized that modern forms of distance learning require variety of forms, which would be useful to reach its scattered audience. One of these significant methods applied by distance education is information technology, which can range from simple telephone services to radio broadcasts to sophisticated computer-based services. According to Adibe (2002) adoption and use of ICTs in distance education is a landmark that is carrying education delivery to the heights.

ICT Application in Nigerian Education

In Nigeria today, ICTs are being integrated into the process of education. It is being used to break the chains of confinement

as virtual learning and collaborative education activities are taking place across geographical regions. According to Adibe (2002), even though the application and use of ICTs in education in Nigeria have been severely underutilized, there have been tremendous growths in the use of ICTs. Today, through ICT strategies the content and reach of education programs can be expanded and extended to increase effectiveness.

ICTs utilization in Nigeria provides opportunities to challenge many of those existing ideas about the education process, which are considered outdated and slow to change (Williams, 1991). The rapid development of ICTs causes many changes in the statutory responsibilities of the academic staff in Nigerian tertiary institutions. Institutions are becoming globalized and traditional methods teaching and learning are becoming impracticable.

Lepper and Gurtner (1989) emphasized that the introduction of ICT into education in Nigeria raised hopes for radical changes and improvements in the teaching-learning process, providing greater and more equitable opportunities for learners and teachers. They (ICT facilities) serve as new and unique delivery system affording an interactive teaching and learning method. The education sector is one area in developing economics where ICT facilities are gradually making an impact. In Nigeria, development in ICT is becoming more and more important in the education sector and the adoption or not to large extent is believed to have a serious positive or negative effect on performance of education. However it is believed that, the output of education can be improved with the use of ICT.

Basically, ICT is virtually becoming essential in distance learning such that institutions management almost everywhere now perceive it as necessary in the process of distance learning and teaching. The use of ICTs in Distance learning is changing what is learnt, how learning takes place, and where. ICTs have introduced the concept of new methods of learning, new

methods of teaching and new methods of conducting research and have brought into education, facilities for on-line learning, on-line teaching, on-line research and collaboration. The increasing availability, use and globalization of information and communication technology (ICT) facilities have begun to create relationship between their application and the competitiveness and productivity within academic community.

According to Jegede (2003), the Federal Government plan of action for a decade of distance education in Nigeria (2001-2010) recognized that distance education uses a variety of available technologies to provide and/ or improve access to good quality education to a large number of people either because they missed the opportunity earlier in life or because their present socio economic and family circumstances would not permit them to acquire education through the formal school system.

Data Analysis and Interpretation

Table 1: Distribution of Respondents Based on Designation

Designation	Frequency	Percentage (%)
Facilitators	63	72.4
Administrative staff	24	27.6

Table 1 shows the distribution of respondents based on their designation. Majority of the respondents were facilitators, who engage in teaching and research activities.

Range of ICT Facilities Available for Distance Learning Operations at NOUN

Table 2: ICT Facilities Available to Staff at NOUN
Institutional availability

ICT facilities	Frequency	Percentage (%)
Computers	53	60.9
Telephone facilities (GSM/Landline)	87	100.0
Photocopiers	25	28.7
Scanning machines	28	32.2
Internet/E-mail	31	35.6
Television	52	59.8
Radio	57	65.5
Audio cassette/CD	47	54.0
Video cassette/VCD	49	54.0
Slow scan television	18	20.7
Satellite	-	-
Teleconferencing	10	11.5
Fax facility	19	21.8
Printers	27	31.0
Telegraph	-	-
Video conferencing	12	13.8

Table 2 above reveals telephone facilities (87 or 100.0%), radio (57 or 65.5%), computers (53 or 60.9%) and television (52 or 59.8%) as the most commonly available ICT facilities at NOUN. Other commonly available ICT facilities are videocassette/VCD (49 or 56.3%) and audio cassette/CD (47 or 54.0%). The least commonly available ICT facilities as revealed by the data are teleconferencing facility (10 or 11.5%), video conferencing (12 or 13.8%) and slow scan television (18 or 20.7%). This implies that a reasonable level of ICT facilities is available for teaching and learning activities at NOUN.

Specific Areas of ICTs Application for Open and Distance Learning Activities at NOUN

Table 3: ICTs Use for DLE Activities

DLE activities	Facilitators		Administrative Staff	
	Yes	No	Yes	No
Instructional content delivery	21 (33.3%)	42 (67.0%)	—	—
Tutorials	16 (25.0%)	47 (75.0%)		
Guidance and counseling	—	—	—	—
Academic consultations	18 (29.0%)	45 (71.0%)	15 (62.0%)	9 (38.0%)
Administrative functions	—	—	—	—
Research work	20 (32.0%)	43 (68.0%)	—	—
Online submission of grades	27 (43.0%)	36 (57.0%)		
Digitization of records	—	—	17 (71.0%)	7 (29.0%)
Communicating with colleagues	23 (37.0%)	40 (63.0%)	14 (58.0%)	10 (42.0%)
Community development activities	11 (17.0%)	52 (83.0%)	—	—
Scientific and scholarly endeavours	14 (22.0%)	49 (78.0%)	—	—

On the frequency of ICTs use for distance learning activities by the respondents, table 4 reveals that majority of the facilitators do not make use of ICT facilities in discharging their duties as regards distance learning activities. On the other hand, the data in table 4 reveals that majority of the Administrative staff employ ICT in discharging their statutory duties and activities.

Competency Level of NOUN Staff in the Use of ICT Facilities

**Table 4: ICT Competency Level of NOUN Staff
Frequency/Percentage**

ICT facilities	High Competency Level	Low Competency Level	No Response Level
Computers	45(52.0%)	41(47.1%)	1 (1.1%)
Telephone (GSM/Landline)	60 (69.0.0%)	20 (23.0%)	7 (8.0%)
Photocopier	29 (33.0%)	27 (31.0%)	31 (36.0%)
Scanning machines	15 (17.0%)	21 (24.0%)	41 (47.0%)
Internet/E-mail	17 (20.1%)	25 (29.0%)	35 (40.0%)
Television	79 (91.0%)	-	8 (9.0%)
Radio	81 (93.8%)	-	6 (7.0%)
Audio cassette/CD	85 (98.0%)	-	2 (2.0%)
Video cassette/VCD	78 (90.4%)	-	9 (10.0%)
Slow scan television	7 (8.0%)	9 (10.0%)	71 (82.0%)
Satellite	5 (6.1%)	9 (10.0%)	73 (84.0%)
Teleconferencing	10 (11.5%)	8 (9.2%)	69 (79.3%)
Fax facility	18 (20.7%)	19 (21.8%)	40 (45.9%)
Printers	38 (43.7%)	38 (43.7%)	28 (32.2%)
Video conferencing	17 (19.5%)	17 (19.5%)	49 (56.3%)

Table 4 reveals that majority of the NOUN staff have a high competency level in the use of Audio cassette/CD (85 or 98.0%), radio (81 or 93.0%), television (79 or 91.0%), video cassette/VCD (78 or 90.0%), telephone facilities (60 or 69.0%) and computers (45 or 52.0%). However, majority of the staff were silent on their competency level in the use of Satellite (73 or 84.0%), slow scan television (71 or 82.0%), teleconferencing (69 or 79.3%), telegraph (66 or 75.9%) and videoconferencing (49 or 56.3%). It may, thus, be concluded that the respondents do not know how to make use of sophisticated ICT facilities.

Factors Hindering Effective Application of ICT Facilities by NOUN Staff

Table 5: Factors Hindering ICT Application and Utilization by NOUN Staff

Constraints	Frequency	Percentage (%)
Lack of fund	73	83.9
Poor power supply	82	94.3
Lack of management support	33	38.0
Poor infrastructure	61	70.1
Lack of adequate skill by staff	79	90.8
High cost of purchasing ICT facilities	66	75.9
High cost of maintaining ICT facilities	57	65.5
Lack of in-house expert to maintain ICT facilities	27	31.0
Lack of adequate access to ICT facilities	32	36.8

Table 5 reveals that majority of the NOUN staff confirmed poor power supply (82 or 94.3%), lack of adequate skill of staff (79 or 90.8%), lack of fund (73 or 83.9%), high cost of purchasing ICT (66 or 75.9%) and high cost of maintaining ICT facilities (57 or 65.5%) as major factors hindering ICT application and utilization for distance learning activities by NOUN staff. Other factors hindering ICT facilities utilization by NOUN are lack of adequate access to ICT facilities (32 or 36.8%) and Lack of in-house expert to maintain ICT facilities (27 or 31.0%).

Discussion of Findings

Range of ICT Facilities Available for Distance Learning Programme at NOUN

The study revealed that telephone facilities, radio, computers, television, video cassette/VCD and audio cassette/CD as the most common ICT facilities available to the staff for distance and open learning activities at the National Open University of Nigeria. However, some of the respondents confirmed that they make personal arrangement either through purchase or buying time at business centers or cybercafés. This shows that there is a reasonable level of ICT facilities availability to the NOUN staff. This corroborates Nwizu (2008) view that emphasized radio, television, videocassette, audiocassette, fixed telephone and mobile telephone as ICTs that are accessible to distance education participants in the generation and dissemination of information in Nigeria.

Specific Areas of ICT Application for Distance Learning Activities at NOUN

The major areas of ICT application at the National Open University of Nigeria (NOUN), as revealed by the study include: online application for admission, online registration, administrative functions, online submission of results and digitization of student records. However, the application of ICTs for delivering instructional content and online submission of grades, tutorials delivery, academic consultations, communicating with colleagues, community development activities and scientific and scholarly endeavours is at a low level as only few of the facilitators use ICTs for these activities. On the other hand, majority of the administrative staff are employing ICTs in their activities which include digitization of student records, communicating with colleagues and administrative functions.

Competency Level of NOUN Staff in the Use of ICT Facilities

Information gathered on the competency level of the facilitators and administrative staff involved in open and distance learning at NOUN shows that the most of the staff are highly competent, only in the use of audio cassettes/CD, radio, television, Video cassette/VCD, telephone facilities and Computers. This determines why there is much reliance on the use of Print materials, such as prepared lecture notes or handouts to deliver instructions. Every course has a prepared, print-based, instructional materials used for delivering instruction. The few facilitators that are ICT literate, however, do make use of ICT facilities such as VCD/DVD or Internet/e-mail facility to deliver their instructions. This is in contrast to Mcharazo (2006) views that emphasize the need for the integration and use of computers, Internet/e-mail facilities, video conferencing and teleconferencing facilities and CD-ROM for a successful distance learning operation.

Factors Hindering Effective Application and Utilization of ICT for DLE

On the constraints hindering the use of ICTs for distance learning at the National Open University of Nigeria, the study revealed factors such as poor power supply, lack of adequate skill by staff, lack of fund, high cost of purchasing ICT and high cost of maintaining ICT facilities as major factors hindering effective utilization of ICTs by staff thereby hindering full application and utilization of ICTs for distance and open learning at NOUN. This corroborated Adeyemi (2003) view that emphasized lack of funding, problem of ICT maintenance, lack of adequate infrastructure and lack of management support as major constraints to ICTs implementation and utilization in any organizations

Summary

Effective use of ICTs depends on the availability of such facilities and adequate provision of infrastructural facilities to support application and utilisation. However, this study

revealed that, even though there is a reasonable level of ICT facilities availability at NOUN, they are not being fully utilized for distance learning operation. For instance there is a very low level of utilization of ICTs for teaching and learning which is the core of distance learning operation. This is because the staff is not adequately skilled in the use of ICT facilities for open and distance learning education. Problems of inadequate funding, poor infrastructural facilities and lack of commitment on the part of government are major constraints that have not made NOUN to fully maximize the potentiality of ICTs for its operations as a distance and open learning university.

Conclusion

Today distance education is primarily used in addressing the shortcomings of traditional face-to-face education. However, the global marketplace and emerging information infrastructures is changing the landscape of distance education. In Nigeria, the need to deploy heavily ICT tools for distance education is inevitable as this appears to be the only pragmatic approach today for distance education. NOUN has not been able to fully utilize the potentials of ICTs in their distance and open learning education.

The fact that ICTs can play a major role in providing distance education in Nigeria is being gradually realized and efforts are on to develop quality education system through distance mode. However, the full application of ICTs in delivering instruction, which is the core of ICTs application in distance learning, has not been fully realized in Nigeria. This is due partly to the lack of skills in the use of ICT facilities.

Recommendations

The telecommunication infrastructures in Nigeria should not be limited to the urban areas alone, it has to be extended to the rural areas and by implication everybody. This will enable the distance learners in the rural areas to benefit from the advantages of ICTs application in distance learning.

There is also the need to train both the facilitators and other staff of NOUN in the use and application of ICTs. This will enable these staff to effectively applied ICTs in the process of carrying out their specific duties. More specifically, the facilitators should be trained in the use of ICT for instruction delievery and research. The training could be offered by experts in both public and private sector who have distinguished themselves in the use of emerging technologies.

Government and other policy makers involved in distance education should explore, encourage and promote the development and use of emerging ICTs at all levels of the educational spectrum.

Also, government and other stakeholders in distance education should take steps to advance and support the use of ICTs and move rapidly to develop distance education programs of the highest quality

Access and cost of access to ICTs must be attainable and affordable for students. While universities can always find ways to make DE technologies available to its staff and personnel. Students must also be considered in the costing equation of 'access'. The cost of using ICTs, such as the cost of Internet access, cost of sending SMS, or cost of the mobile telephone itself, must be considered when selecting technologies to support distance education.

There should be provision for adequate infrastructural facilities, such as power supply to support ICTs implementation, application and use for open and distance learning in Nigeria.

References

Adeogun, N. M. (2003). Making Information Technologies Serve Africa's Information Needs: Strategies, issues. Reader on Information Management Strategies for Africa's Development. Nairobi: ICIPE Science Press, 65-68.

Williams, A. F. (1997). *Growing up Digital: the rise of the net-generation*. New York: McGraw-Hill, 567p.

World Bank (2003). *What is Distance Education and Information Communication Technology?* The World Bank group. Available at <http://go.worldbank.org/k6GRLZX50>, Assessed on 02/03/08.

Umoru - Onuka, A. O. (2001) Planning a distance education programme (DEP): a proposal. In Awosika, Yomi et-al (ed) *Topical Issues in Education. Papers in honour of Professor C. O. Udoh*. Ibadan Faculty of Education, University of Ibadan, 227 — 241.

Williams, A. F. (1997). *Growing Up Digital: The Rise of the New Generation*. New York: McGraw — Hill, 59 — 60.

World Bank (2003). *What is distance education and information communication technology?* The World Bank group Retrieved from <http://gp.worldbank.org/K6GRLZX50> on 02/03/08.