INTEGRATION OF INFORMATION COMMUNICATION TECHNOLOGY ON DISTANCE EDUCATION IN NIGERIA UNIVERSITIES (A CASE STUDY OF THE NATIONAL OPEN UNIVERISTY, EDO STATE)

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CHAPTER ONE
INTRODUCTION

Background to the Study

Promoting the development of a knowledge society through open and distance education is one of the tactics increasingly adopted in recent times by governments around the world who want to encourage economic development at the local, state and national levels. Researchers (Howell, Williams & Lindsay, 2003) have shown that distance education programs in particular are growing in importance as centers for the development of knowledge society, and this has led several countries, notably those in the west to develop strategies to encourage this effort aimed at providing people who do not have the opportunities to attend conventional institutions of higher learning. However, advances in information and communication technologies (ICTs) have posed complex problem for colleges and universities in Sub-Saharan Africa (Ololube, 2006, pp. 101-118), especially in their distance education programs to reaching the goal of promoting the development of a knowledge society

Distance education, also called open or distance learning is a form of education in which there is normally a separation between teachers and

learners. Thus, it includes one which others may refer to as a means of the printed and written word, the telephone, computer conferencing or teleconferencing used to bridge the physical gap between the instructor and the learner. Distance education equally involves the provision of whatever educational opportunities that are needed by anyone, anywhere, at any time for those who otherwise would have been denied. Improving the quality of education through the diversification of contents and methods and promoting experimentation, innovation, the diffusion and sharing of information and best practices as well as policy dialogue are UNESCO's strategic objectives in Education (UNESCO, 2005)

By itself, information and communication technologies (ICTs) literacy rate have become key tools that has a revolutionary impact of how we see the world and how we live in it. ICT literacy is the capability (knowledge, skills and aptitude) of a person to identify, search effectively and present specific information in order to build knowledge and develop critical and creative thinking pertinent to a field of study. This phenomenon has given birth to the contemporary and advances in our ways of life. ICTs are having a revolutionary impact on educational methodology both at conventional and

distance education levels globally. However, this revolution is not widespread and needs to be strengthened to reach a large percentage of the population. In a complex society like Nigeria, many factors affect distance education. Therefore an interdisciplinary and integrated approach is very necessary to ensure the successful development of Nigeria's economy and society (Mac-Ikemenjima, 2005).

The academic landscape in Nigeria includes the teaching and learning process, along with the educational programs and courses and the pedagogy or methodology of teaching; the research process, including dissemination and publication; libraries and information services; higher education administration and management, and distance education programs (Beebe, 2004). According to the national policy on education, Federal Republic of Nigeria (1989), higher education refers to postsecondary section of the national education system which is given in Universities, Polytechnics and Colleges of Technologies including such courses given by Colleges of Education, Correspondence Colleges and such institutions as may be allied to them. The terms of references for these institutions of higher education as indicated in the national policy on education are:

- The acquisition, development and inculcation of the proper value-orientation for the survival of the individual and society.
- The development of intellectual capacities of individuals to understand and appreciate their environments
- The acquisition of both physical and intellectual skills which will enable individuals to develop into useful members of the community
- The acquisition of an objective view of the local and external environments (p. 22).

The Federal Republic of Nigeria (2004) through its national policy on education detailed that the goal of distance education should be to:

- Provide access to excellence education and equity in educational opportunities for those who otherwise would have been denied.
- Meet special needs of employers by mounting special certificate courses for their employees at their work place.
- Encourage internationalization especially of tertiary education curricula.

- Restructure the effect of internal and external brain drain in tertiary institutions by utilizing Nigerian experts as teachers regardless of their locations or places of work (p. 45).

Statement of the Problem

With the advent of the internet, the job of distance education and distance educators has become easier. As the world becomes a global village, communication and information can now be both assessed and shared through the information super highway. The contemporary society has come to the point where as sandbank quoted in Nsereka (2003, p. 3) would say, one person by the manipulations of nature could be in touch with millions of people in different places at the same instant. In the past few years, the experience of schools using Information and Communication Technology (ICT) has gradually been disseminated. While one could talk about the use of communication devices such as the telephone, fax, SMs, HyperCard, Hypermedia, video conferencing and teleconferencing , electronic news gathering, electronic publishing one has got to also talk about wireless paging, the computer and of course the internet and information super highway. Thus, the federal government is convinced that for higher

education to make optimum contribution to national development, ICTs are essential ingredient to foster its implementation. Though, the integration of Information and Communication Technologies (ICTs) in distance education programmes in Nigeria in general and in the University of Benin in particular has not been encouraging. Based on the foregoing indicators, the researchers have decided to investigate the Integration of Information Communication Technology on Distance Education in Nigeria Universities (National Open University, Edo State).

Research Questions

The following research questions were raised to guide the study

1. What are the various ICT tools available for distance education in the National Open Universities in Edo State?
2. What impact does the use of Information and Communication Technology media have on the practice of distance education?
3. What teaching methods in distance education support the use of Information and Communication Technology media?
4. What challenges face ICT usage, integration and diffusion in Nigerian distance education programs?

Purpose of the Study

The cardinal purpose of this study is to investigate the Integration of Information Communication Technology on Distance Education in Nigeria Universities (A case study of National Open University, Edo State). Specifically, the study sought to;

- Find out the various ICT tools available for distance education in the National Open Universities in Edo State
- Ascertain the Impact of Information and Communication Technology media have on the practice of distance education
- Determine the teaching methods in distance education support the use of Information and Communication Technology media
- Find out the challenges face by ICT usage, integration and diffusion in Nigerian distance education programmes

Significance of the Study

The findings of this study are considered significant for a number of reasons. First and foremost, the finding is expected to help the government and policy makers on the way forward to support distant learning

programmes provide enabling environment through the provision of power, ICT media and personnel for improve academic performance of students and the general literacy level in Nigeria.

The findings of this study will also be of immense benefits to the university administrators, to known the challenges facing the various centres for distance learning and take necessary steps in reducing its.

To the researchers, and readers, the findings of the study will not only serve as an addition to knowledge or existing literature, but it will also serve as a ready reference material that could form a basis for further research in the area

Scope/Delimitation of the Study

This study investigates the Integration of Information Communication Technology and Distance Education in Nigeria Universities. However, the study is delimited to the National Open University Edo State branch

Definition of Terms

For the purpose of clear understanding, the following terms are operationally defined according to their usage in this study;

ICT: any product that will store, retrieve, manipulate, transmit and analyses information electronically in digital form including the internet, broadcasting technologies and mobile phones. For purpose of this research the term ICT will be operationalized to imply only computers and related peripheral devices for instance projectors, printers and scanners.

Integration: the act of bringing together smaller components into a single system that functions as one. ... These links usually are established between the components of the process and control layer of each system to promote the free flow of data across systems.

Distance Education: is a field of education that focuses on the pedagogy, technology, and instructional. System designs that aim to deliver education to students who are not physically "on site" in a traditional classroom or campus

CHAPTER TWO

REVIEW OF RELATED LITERATURE

In this chapter relevant related literature were reviewed under the following sub-headings:

- Concept of Information and Communication Technologies
- Meaning of Distance Education
- ICT tools Available for Distance Education
- Impact of Information and Communication Technology on Distance Education
- Challenges Facing ICT usage, Integration and Diffusion in Distance Education Programmes
- Summary of Reviewed Literature

Concept of Information and Communication Technologies

Information and Communication Technologies (ICTs) are advances in technologies that provide a rich global resource and collaborative environment for dissemination of ICT literacy materials, interactive discussions, research information, and international exchange of ideas, which are critical for advancing meaningful educational initiatives, training high skilled labor force, and understanding issues related to economic

development. ICTs highlight innovative efforts and partnerships and promote ICTs literacy, and facilitate interaction between all sectors of a national economy including external spheres. Higher education institutions across the world have been adopting ICT teaching and learning technologies in an effort to create an environment for both students and their instructors to engage in collaborative learning environment and gain access to information (Ifinedo, 2006).

Access to information through ICT is the amount of information accessible to individuals to support them in trying new strategies, thinking and creativity that are reflective in practice aimed at engaging them to new innovations through the use of ICTs. Information and communication technologies (ICTs) are indispensable and have been accepted as part of the contemporary world especially in the industrialized societies. In fact, cultures and societies are adjusted to meet the challenges of the knowledge age. The pervasiveness of ICT has brought about rapid changes in technology, social, political, and global economic transformation (Nwachukwu, 1994; Yusuf, 2005).

Meaning of Distance Education

Distance Education has become one of the most rapidly growing fields of education and training. According to UNESCO (2002), it is fast becoming an accepted and indispensable part of the mainstream of educational systems in both developed and developing countries. The goals of distance education, as an alternative to conventional education, have been to offer degree granting programmes, to battle illiteracy in developing countries, to provide training opportunities for economic growth, and to offer curriculum enrichment in non-traditional educational settings (Al-Fahad, 2009).

Therefore, distance education means the delivery of useful learning opportunities at convenient place and time for learners, irrespective of the institution providing the learning opportunity (Kaufman, Watkins & Guerra, 2001). Generally, distance education has four major characteristics as identified by ADEA Working Group on Distance Education and Open Learning (2002). These characteristics are: institutional accreditation where learning is certified by an institution or agency; use of variety of media for instructional delivery; provision of two-way communication to ensure tutor-

learner, and learner-learner interaction; and possibility of face-to-face meetings for tutorials for leaner-learner interaction, laboratory or practice session or library study. Distance education not only shares the goals of conventional education, but it also aims at providing access to historically under-served, place bound, and highly motivated population. Distance education is said to be open because of students' freedom and programme flexibility. It is flexible and open in terms of its admission requirements, that is, not as rigid as in conventional institutions, freedom in terms of place of study, time, place, and composition of study programme, content and didactic approach. It is intended to offer useful learning opportunity to recipients at a time and local environment convenient to them. Contacts between the student and institutions are provided through interactive and non-interactive media. It may also be provided through some contact at study centre. Unlike the conventional face-to-face instruction, the delivery medium plays a crucial role in minimising the gap between teaching and learning (Keegan, 1996).

Distance Education is synonymous to technology: from print (correspondence systems), to Educational Radio and Television systems, to

multimedia systems and then Internet based systems. Al-Fahad (2009) added that Distance Education relies heavily on technologies that include: Print, broadcast radio, broadcast television, computer conferencing, electronic mail, interactive video, satellite telecommunication and multimedia computer technology in order to promote student-teacher interaction and provide necessary feedback to the learner at a distance. Literature has however pointed to the persistent challenge of lack of infrastructural development in sub Saharan Africa (Yusuf, 2005; Olulobe, 2007; Kwache, 2007; Olakulehin, 2010; Ofulue, 2011), which impedes the use of appropriate technology to advance Distance Education**.**

ICT tools Available for Distance Education

The use of effective technology is critical to distance education The activity field suggests many institutions have a long road to travel before they can offer successful Distance programs. Hartley (2004) concluded that the technology revolution has not reached academic or advising systems‖ (as he called them). He reached the conclusion by noting that only 2 of 10 technologies used to support the work of Teachers (Advisors) were found on more than 50% of campuses. These were :- online registration(60%) and

degree audit system(57%)(p.25) the only synchronous delivery technology found on more than half of the campuses was the old, but reliable telephone (72%) with the next closest being the FAX machine (35%). Correspondingly, the only asynchronous delivery technology found on over 50% of all campuses was Email (85%). When respondents were asked to evaluate their satisfaction with the effectiveness of advisors a 3.03 rating on a 5 point scale was realized (Hartley, 2004 p.84).

Information communication technologies (ICTs) are information handling tools that are used to produce, store, and process, distribute and exchange information. These different tools are now able to work together, and combine to form networked world- which reaches into every corner of the globe (UNDP Evaluation Office, 2001). It is an increasingly powerful tool for participating in global markets, promoting political accountability; improving the delivery of basic services; and enhancing local development opportunities (UNDP, 2006). To Ogunsola (2005) ICT "is an electronic based system of information transmission, reception, processing and retrieval, which has drastically changed the way we think, the way we live

and the environment in which we live". It can be used to access global knowledge and communication with other people (Ogunsola, 2005). Students who learn with ICTs gain deeper understanding of complex topics and concepts and are more likely to recall information and use it to solve problems outside the classroom (Apple Computer, 2002). In addition, through ICT, students extend and deepen their knowledge, investigation, and inquiry according to their needs and interest when access to information is available on multiple levels (CEO Forum on Education and Technology, 2001).

Technologies available in classrooms today ranges from simple tool-based applications (such as word processors), to online repositories of scientific data. Others are primary historical documents, handheld computers, closed-circuit television channels, and two-way distance learning classrooms. Prensky (2005) asserts that even the cell phones that many now carry with them can be used to learn. According to Lei and Zhao (2006) each technology is likely to play a different role in students learning. Rather than trying to describe the impact of all technologies as if they were the same,

researchers need to think about what kind of technologies are being used in the classroom and for what purposes. These usability guide the teachers attitude to the application of these equipment's. Students can learn from computers where technology are used essentially as tutors and serve to increase student's basic skills and knowledge. Moreover, they can learn with computers where technology is used as tool that can be applied to a variety of goals in the learning process and can serve as a resource to help develop higher order thinking, creativity and research skills (Ringstaff and Kelley, 2002).

The critical importance of Hartley's analyses is that distance education is defined as the use of asynchronous technologies to assist both the traditional and distant learners, identify and achieve their maximum educational potential which enables them reach their educational goals. Without these technologies and techniques the students will not engage in effective distance education. Ojo (1981) recognized that distance learning utilizes a wide range of teaching technique. He added that apart from using prints, radio, television, there are other supportive services like posts,

telegraph and computer facilities. These all come together to be branded as Information and Communication Technology Media.

Educational media

An educational medium is a channel of communication which is used or can be used in an educational program (Todds, 1983). This definition includes all forms of communication not just the mass media of broadcasting and press. They are itemized and briefly discussed below:-

Print media come in varied forms including correspondence courses, instructional materials; work cards programmed texts, newspapers and magazines, flip charts etc. Permanence is an important feature of Print which is limited to use.

Broadcast Media refers to the radio and television. The radio has enormous potential and can cover large audiences and reach isolated spots. It is good at creating dialogue either within a listening group or between listeners and the program organizers. Tutorial broadcasts can be made for correspondence students (with students given prior knowledge of the time it is going on air) responding to commonly felt difficulties. The features of the television are similar to that of radio, but the visual elements give an additional dimension

to it. Hence, given a choice, people often prefer TV to radio. The television makes it possible to use broadcasting for visual presentation (for example in geography or science having a target audience in mind) which would otherwise have to be done in print.

Face to face contact. Some learners actually prefer impersonally presented information while other put off learning altogether if they react adversely to the person concerned. It is believed however that even the smallest face to face contact makes distance education more effective.

Cassette: Cassette players and tapes as well as interactive sessions on a CD of a computer usually need to be provided and distributed. They are very useful.

Slides: - These are simple forms of graphic presentations the main item with high cost is the taking of the photographs but the slides themselves are cheap and easy to produce.

The Computer: The computer is one of the finest legacies of these times. The advent computers revolutionized printing and academic activities. It is a machine that can accept data in raw form, process it and supply the results as output.

The Internet; Much has been written about the internet as the hub of modern Information and Communication Technology and accruing benefits of the on-line activities which it offers on the internet. For example, exchange of electronic mail, downloading of information, news update, on-line registration and e-library among others are both possible and available (Nwajinka 2004).

Impact of Information and Communication Technology on Distance Education

The provision of education to many people at a time has led to the policy of distance learning programme and the speedy vehicle towards ensuring the realization of this goal is the application of ICT to learning. World Bank (2002) also perceived that ICT has the convergence of activities that facilitate capturing, processing, transmission of information through digital electronic devices, telecommunication, internet, World Wide Web, virtual reading and cyber space. On the concept of distance education, Hartley (2004) defined it as the use of synchronous technologies to assist both the traditional and distance learners to identify and achieve their

maximum educational potential which enables them to achieve their educational goals.

The impacts of ICT on all spheres of human endeavors have been so tremendous. Most remarkable is the education sector which has been transformed by the use of ICT and where ICT are used for learning, evidences suggests than they are chiefly used to present and disseminate information as tools for presentation rather than the often cited promotion of 21st century skills. (Omotosho, Adeef, Amusa and Bello 2005). On this note, Liberero (2006) observed that conventional Universities and other educational institutions are now using ICT to achieve blended learning environments which blend traditional face to face classroom delivery with distance delivery. The use of ICT in distance learning has helped in reshaping the entire academic organizational structures. West-brook (2001) observed that the introduction of ICT in education has resulted in changes in four core areas of education such as curriculum, role of teachers and students organizational structures and learning environment given that a growing number of transactions now take place on line at a distance, appropriately automated systems for recording these transactions tracking them keeping

and retrieving students records and therefore must be supported by holistic policies that take into account academic related activities. Advancement in education has given room for using various tools that will enhance the dissemination of information to learners, but it should be noted that there could be many challenges to this effect. On this note, Hartley (2004) concluded that the technological revolution has not reached academic or advising systems. He reached the conclusion by noting that only 2 to 10 technologies used to support the work of teachers were found in more than 50% of campuses

Challenges Facing ICT usage, Integration and Diffusion in Distance Education Programmes

Despite the keenness by institutions of higher learning to establish distance education programs, they are confronted with enormous problems that may have impeded its proper implementation. Some of these problems are: Poor ICTs penetration and usage among Nigerian distance education practitioners. Approximately almost all African countries basic ICTs infrastructures are inadequate; this is as a result of problem of electricity to power the ICTs materials, poor telecommunication facilities, and poor postal

system. Above all the lacks of access to the needed infrastructures is made awkward because of insufficient funds.

According to Yusuf (2006), successful distance education cannot be assured without the use of effective communication and technological tools (e-mail, fax, Internet, television, radio, etc.). Several cities and rural areas in Nigeria are yet to have or have fluctuation in electricity supply. Just like electricity, most Nigerians do not have access to telephone and other telecommunication facilities. Even, telephone lines in the urban centres are not adequate to serve the teeming population. Services for those who have access are in most cases epileptic. These may make the integration of telecommunication in the delivery of distance education difficult. In addition, poor state of telephone has led to increase in dialup cost for most Nigerians. Even with the recent introduction of GSM in August, 2001, access is still limited and services are yet to be perfect and service charge may make GSM unattractive for distant learners. Poor economic situations and its effects on middle level manpower, stands as the major obstacle towards the implementation of ICTs in distance education. Even an average middle income earner cannot afford basic technological and communication gadgets.

Thus, computer related telecommunication facilities might not be useful for most. Nigerians, as computer is still a luxury in institutions, offices and homes. This has made the integration of necessary on-line resources (e-mail, newsgroups, worldwide- web, etc.) into distance education in Nigeria most difficult.

Similarly, according to UNESCO (1998), Igwe (2005) and Nwagwu and Ahanihe (2006), efforts to improve ICT access in Africa have been hampered by a number of factors, these are summarized as follows:

- prospective ICT users that have expertise, competencies and equipment to benefit from access to electronic information networks are minute in number;
- there is shortage and high costs of equipment, software and information compared to situations in the industrialized nations;
- there is lack of reliable and accessible physical telecommunications infrastructure; telecommunications monopoly, associated with overly restrictive regulations and high costs, and

- lack of interregional networking and cooperation amongst national universities and international institutions.

In the same vein, Commonwealth of Learning International (2001), made it clear also that the inadequacy of essential services and infrastructure like electricity, telecommunications and postal services must be developed to levels that could support the declared scale of open and distance education in order to increase administrative network and develop a proper link between faculty and students learning. Perhaps, another most serious challenge facing distance education at this level in Nigeria is the need for the integration of new ICT literacy knowledge into academic courses and programs. This state of affairs grew mainly from the political isolation that Nigeria experienced during the military eras. Nigeria's professionals were not able to benefit from international assistance and lack of international networking and cooperation or from courses, conferences and seminars abroad. This denial of assistance and interaction has adverse consequences, both on the psyche of faculty and on the development of infrastructure necessary for professional development (COL International, 2001)

Summary of Reviewed Literature

The researcher reviewed pertinent related literature in the area of the effects of the integration of Information Communication Technology and Distance Education in Nigeria Universities (A case study of the University of Benin).

The review revealed that ICT is the process of gathering, creating, processing, and storage of information by using hardware, software, as well as the internet and global system of mobile communication (GSM). However, the communication aspect of ICT is assuming more significance now than ever before, hence, it is now more appropriate to use the expression ICT rather than mere information technology which has become the back bone of the new information based global economy.

The review also shows that distance education means the delivery of useful learning opportunities at convenient place and time for learners, irrespective of the institution providing the learning opportunity. Distance Education relies heavily on technologies that include: Print, broadcast radio, broadcast television, computer conferencing, electronic mail, interactive video, satellite telecommunication and multimedia computer technology in

order to promote student-teacher interaction and provide necessary feedback to the learner at a distance

The review also revealed that the challenges of ICT integration in distance education area: lack of expertise, shortage and high costs of equipment, software and information compared to situations in the industrialized nations, lack of reliable and accessible physical telecommunications infrastructure; telecommunications monopoly, associated with overly restrictive regulations and high costs, and

CHAPTER THREE

METHODOLOGY

This chapter is designed to examine the procedures and methods that will be employed in the collection and analysis of data for this study. They are treated under the following sub-headings:

- Research Design
- Population of the Study
- Sample and Sampling Technique
- Research Instrument
- Validity of the Instrument
- Reliability of the Instrument
- Method of Data Collection
- Method of Data Analysis

Research Design

A descriptive survey research design was adopted for the study. The choice of this design stems from its strength as a useful means for fact finding and an acknowledged means of obtaining social facts and opinions

for the purpose of describing and interpreting existing conditions. (Nwongu, 2006). This chosen research design method is appropriate, especially for seeking individuals' opinions, attitudes and perceptions in their natural setting and it enables the researcher to make generalization concerning his population of study

Population of the Study

The population consists of all the 2000 students of the National Open University of Nigeria, Edo state chapter. Students are chosen for this study among other populations for certain reason(s). It is students that participate in the teaching provided by the school. They are at the receiving end of which every information and communication technology medium the school uses or utilizes should be either in their advantages or disadvantages. Therefore they should be capable to make suggestions to schools on the method of study they prefer to others.

Sample and Sampling Techniques

A sample of 200 students was drawn from the population; this was a fair representation of the current enrolment level at the branch of the university. However, as a general rule, the larger the sample, the more likely it is to

fairly represent the population (Ali, 1996). A simple random sampling procedure was used. This was done by determining the population of students in each department. Hence a 10% of the general population was drawn out for the study: this gives 200 students accessible population (sample).

Research Instrument

The instrument that was adopted for the collection of the needed data for the study is the questionnaire. The questionnaire titled: Integration of Information Communication Technology on Distance Education Questionnaire (IICTDEQ). The questionnaire comprises of Section "A" and "B". the Section 'A' of the instrument focuses on gathering personal information of the respondents such as age, sex, occupation, educational qualification among others and Section B will be designed or geared towards seeking information on the issues raised in the research questions. The questionnaire was designed using is a modified likert scale structured in a four point rating scale of: Strongly agree = 4, Agree = 3, Disagree = 2 and Strongly disagree 1 for all positively worded items and reverse for all

negatively worded items. The instrument is made up of twenty (20) items constructed to elicit responses from the various participants.

Validity of the Instrument

The research instrument was validated using the experts' judgment approach. In this view, copies of the draft instruments was given to the project supervisor and two other lecturers in the Department of Adult Education, Faculty of Education, University of Benin for items selection and wording. After which their suggestions were taken into consideration before the final copy of the instrument was administered to the respondents.

Reliability of the Instrument

To determine the reliability of the instrument, the test-re-test procedure was be adopted. In this vein, 20 copies of the instrument were administered on the respondents who were not part of the study sample. After a time lag of two weeks the instrument were re-administered on the same group of respondents. Thereafter, their responses on the two occasions were collated and correlated using Pearson Product Moment Correlation Coefficient formulae to determine the reliability index which was given to be 0.75.

Method of Data Collection

The researcher personally administers the questionnaire to the respondents with the assistance of three trained assistants. The research assistants were briefly trained to ensure that the respondents respond appropriately and the copies of the instrument are retrieved from the respondents. At the administration of the questionnaire, interaction was held with the respondents to create rapport. The researcher will give the respondents enough time to complete the instrument and then collect the copies back the same day.

Method of Data Analysis

The data obtained for the study was analysed using descriptive statistics involving frequency counts and simple percentages.

CHAPTER FOUR

PRESENTATION OF RESULTS AND DISCUSSION OF FINDINGS

This chapter deals with the presentation of the result from the data collected and analyzed. The results were logically interpreted and presented in table as shown hereunder:

Research Question One: What are the various ICT tools available for distance education in the National Open Universities in Edo State?

In proffering answers to the above questions, the researcher gathered and analyzed the relevant data in the instrument precisely those of items 1-4 using percentage statistics and the result is as presented below.

Table 4.1: Data on the various ICT tools available for distance education in the National Open Universities in Edo State

S/N	Variables	SA (%)	A (%)	D (%)	SD (%)
1	We use computer at the centre	84 (42%)	120 (58%)	Nil (0)	Nil (0)
2	We make use of internet services	100 (50%)	100 (50%)	Nil (0)	Nil (0)
3	We also use broadcast media	150 (75%)	50 (25%)	Nil (0)	Nil (0)
4	There is an ICT laboratory at the centre.	130 (65%)	70 (35%)	Nil (0)	Nil (0)

Source: Field Survey, 2021

A critical view of Table 4.1 above showed that 84 (42%) and 120 (58%) of the respondents Strongly Agreed and Agreed respectively that the use of computers are available for distance education in the National Open Universities. Accordingly, none of the respondents Disagreed or Strongly Disagreed on this variable.

In ascertaining whether internet services are available for distance education it was observed that 100 (50%) and 100(50%) of the respondents Strongly Agreed and Agreed respectively on the variable while none of them had a different position.

In the same vein, the researcher was also interested in finding out if they also use broadcast media and from the responses gathered, 150 (75%) and 50 (25%) Strongly Agreed and Agreed respectively while none responded otherwise.

Similarly, it was also found that 100 (44%) and 50(56%) of the respondents Strongly Agreed and Agreed respectively that women participate in the programmes because it provide them a career for non-

working adults participant. There was however no respondent that Disagreed or Strongly Disagreed on this variable.

In determining whether there is an ICT laboratory at the centre. it was observed that 130 (65%) and 70 (35%)of the respondents Strongly Agreed and Agreed respectively on the variable while none of them had a different position.

From the analyses of the responses made on this question by all the participants, it is therefore concluded that the various ICT tools available for distance education in the National Open Universities in Edo State are: computers, internet service, and broadcast media and ICT laboratory

Research Question Two

What impact does the use of Information and Communication Technology media have on the practice of distance education?

In proffering answers to the above questions, the researcher gathered and analyzed the relevant data in the instrument precisely those of items 5-8 using percentage statistics and the result is as presented below

Table 4.2: Data on the Impact of Information and Communication Technology media have on the practice of distance education

S/N	Variables	SA (%)	A (%)	D (%)	SD (%)
5	ICT is contributing strongly to distance learning Education	120 (75%)	80 (25%)	Nil (0)	Nil (0)
6	ICT has removed barrier of accessing instructor that are far away.	170 (85%)	30 (15%)	Nil (0)	Nil (0)
7	The use of ICT has enhanced access to quality Distance education delivery	180 (90%)	20 (10%)	Nil (0)	Nil (0)
8	ICT helps to improve cost efficiency in distance education	100 (50%)	100 (50%)	Nil (0)	Nil (0)

Source: Field Survey, 2021

A cursory look at Table 4.2 above showed that 120 (75%) and 80 (25%) of the respondents Strongly Agreed and Agreed respectively that ICT is contributing strongly to distance learning education. Accordingly, none of the respondents Disagreed or Strongly Disagreed on this variable.

In ascertaining whether ICT has removed barrier of accessing instructor that are far away, it was observed that 170 (85%) and 30(15%) of the respondents Strongly Agreed and Agreed respectively on the variable while none of them had a different position. In the same vein, the researcher was also interested in finding out

In ascertaining if the use of ICT has enhanced access to quality Distance education delivery and from the responses gathered, 180 (90%) and 20 (10%) Strongly Agreed and Agreed respectively while none responded otherwise.

The final variable in the study was meant to find out if ICT helps to improve cost efficiency in distance education. And from the responses gathered and analysed, it was found that 100 (50%) and 100(50%) of the respondents Strongly Agreed and Agreed respectively on the variable while none of them had a different position.

From the analyses of the responses made on this question by all the participants, it is therefore concluded that ICT is contributing strongly to distance learning education, ICT has removed barrier of accessing instructor that are far away, The use of ICT has enhanced access to quality Distance education delivery and ICT helps to improve cost efficiency in distance education

Research Question Three

What teaching methods in distance education support the use of Information and Communication Technology media?

In proffering answers to the above questions, the researcher gathered and analyzed the relevant data in the instrument precisely those of items 9-12 using percentage statistics and the result is as presented in Table 4.3

Table 4.3: Data on the teaching methods in distance education that support the use of Information and Communication Technology media

S/N	Variables	SA (%)	A (%)	D (%)	SD (%)
1	Independent method support the use of ICT	84 (42%)	120 (58%)	Nil (0)	Nil (0)
2	Study centre methods supports the use of ICT	100 (50%)	100 (50%)	Nil (0)	Nil (0)
3	Correspondent methods support the use of ICT	150 (75%)	50 (25%)	Nil (0)	Nil (0)
4	Lecture methods support the use of ICT	Nil (0)	Nil (0)	130 (65%)	70 (35%)

Source: Field Survey, 2021

A critical view of Table 4.3 above showed that 84 (42%) and 120 (58%) of the respondents Strongly Agreed and Agreed respectively that

independent method support the use of ICT. Accordingly, none of the respondents Disagreed or Strongly Disagreed on this variable.

In ascertaining whether study centre methods supports the use of ICT it was observed that 100 (50%) and 100(50%) of the respondents Strongly Agreed and Agreed respectively on the variable while none of them had a different position.

In the same vein, the researcher was also interested in finding out if correspondent methods support the use of ICT and from the responses gathered, 150 (75%) and 50 (25%) Strongly Agreed and Agreed respectively while none responded otherwise.

Similarly, it was also found that 100 (44%) and 50(56%) of the respondents Disagreed and Strongly Disagreed respectively that lecture methods support the use of ICT. There was however no respondent that Disagreed or Strongly Disagreed on this variable.

From the analyses of the responses made on this question by all the participants, it is therefore concluded that the teaching methods in distance education that support the use of Information and Communication

Technology media are: Independent method, study centre, correspondence and lecture methods

Research Question Four

What challenges face ICT usage, integration and diffusion in Nigerian distance education programmes?

In proffering answers to the above questions, the researcher gathered and analyzed the relevant data in the instrument precisely those of items 13-16 using percentage statistics and the result is as presented below

Table 4.4: Data on the challenges face ICT usage, integration and diffusion in Nigerian distance education programmes

S/N	Variables	SA (%)	A (%)	D (%)	SD (%)
13	Lack of fund to purchase ICT facilities	120 (75%)	80 (25%)	Nil (0)	Nil (0)
14	Students are not accessing ICT appropriately	170 (85%)	30 (15%)	Nil (0)	Nil (0)
15	Student lack inadequate skill in using ICT fordistance learning	180 (90%)	20 (10%)	Nil (0)	Nil (0)
16	There is an epileptic power supply.	100 (50%)	100 (50%)	Nil (0)	Nil (0)

Source: Field Survey, 2021

A cursory look at Table 4.4 above showed that 120 (75%) and 80 (25%) of the respondents Strongly Agreed and Agreed respectively lack of fund to purchase ICT facilities. Accordingly, none of the respondents Disagreed or Strongly Disagreed on this variable.

In ascertaining whether students are not accessing ICT appropriately, it was observed that 170 (85%) and 30(15%) of the respondents Strongly Agreed and Agreed respectively on the variable while none of them had a different position. In the same vein, the researcher was also interested in finding out

In ascertaining if the student lack inadequate skill in using ICT for distance learning and from the responses gathered, 180 (90%) and 20 (10%) Strongly Agreed and Agreed respectively while none responded otherwise.

The final variable in the study was meant to find out if there is an epileptic power supply.. And from the responses gathered and analysed, it was found that 100 (50%) and 100(50%) of the respondents Strongly Agreed and Agreed respectively on the variable while none of them had a different position.

From the analyses of the responses made on this question by all the participants, it is therefore concluded that the challenges face ICT usage, integration and diffusion in Nigerian distance education programmes are: Lack of fund to purchase ICT facilities, students are not accessing ICT appropriately student lack inadequate skill in using ICT for distance learning and there is an epileptic power supply.

Discussion of Findings

The result of this study has been quite informative and revealing. Base on the analysis of data or information collected on the opinion of the respondents on “The Integration of Information Communication Technology and Distance Education in Nigeria Universities (A case study of National Open University, Edo State)". In the study, four (4) research questions were raised and examined. The first research question revealed that the various ICT tools available for distance education in the National Open Universities in Edo State are: computers, internet service, and broadcast media and ICT laboratory. Finding from the study is in agreement with that of Omotosho, Lateef, Amusa and Bello (2015) where they averred that the impact of ICT

on all spheres of human endeavors have been tremendous, most remarkable is education sector which has been transformed by the use of ICT.

The second research question revealed that ICT is contributing strongly to distance learning education, ICT has removed barrier of accessing instructor that are far away, The use of ICT has enhanced access to quality Distance education delivery and ICT helps to improve cost efficiency in distance education. This finding is in agreement with the study of Aggarval (2006) where he asserted that the systematic utilization of education technology helps to achieve academic success in distance education. Collaborating this view, Hulsman (1997) posits that one of the crucial features of distance education is the uses of technical media involving mixed media software such as print, radio and television broadcast video and audio cassettes, computer band learning and telecommunications

The third research question showed that the teaching methods in distance education that support the use of Information and Communication Technology media are: Independent method, study centre, correspondence and lecture methods. This finding is in consonance with the study of Osaat and Nsereka (2012) where they asserted that correspondence method, study

centre and independent study are teaching methods in distance education but do not encourage or support use of ICT media. Nevertheless teaching methods such as radio/television broadcast, use of email for assignment collection and submission and the e-library are accepted by the respondents as teaching methods that support use of ICT.

The fourth research question also showed that the challenges face ICT usage, integration and diffusion in Nigerian distance education programmes are: Lack of fund to purchase ICT facilities, students are not accessing ICT appropriately student lack inadequate skill in using ICT for distance learning and there is an epileptic power supply. This finding is in agreement with this finding, Mejuini and Obilade (2006) assert that many people in developing countries live below the poverty line (below US $2) and expend most of their income on food. This is an indication of poverty, leaving them with no money to acquire modern technologies (ICTs) and quality education.

CHAPTER FIVE

SUMMARY, CONCLUSION AND RECOMMENDATIONS

This chapter deals with the summary of the study, the conclusions drawn from the analysis of data collected and interpretation of findings and recommendations offered based on findings made.

Summary

The study was carried out to determine the "Integration of Information Communication Technology and Distance Education in Nigeria Universities (A case study of National Open University, Edo State). Four (4) research questions were raised to guide the study. These include the following

1. What are the various ICT tools available for distance education in the National Open Universities in Edo State?
2. What impact does the use of Information and Communication Technology media have on the practice of distance education?
3. What teaching methods in distance education support the use of Information and Communication Technology media?
4. What challenges face ICT usage, integration and diffusion in Nigerian distance education programs?

A sample size of 200 students which represent 10% of the entire population of 2000 was drawn from the population; this was a fair representation of the current enrolment level at the branch of the university. Questionnaire was the major instrument used for data collection. The questionnaire was made up of Section 'A' and 'B'. while Section 'A' contained the demographic information of the respondents, Section 'B' was meant to elicit data on the various research questions raised and other matters considered important to the success of this study. The reliability and validity of the instrument was determined. The validity of the instrument was determined by the project supervisor and other two lecturers from the Department of Adult and Non-Formal Education, Faculty of Education, University of Benin, Benin City. The reliability of the instrument was determined through test-retest procedure and the value obtained was through Pearson Product Moment Correlation Coefficient reliability index of 0.75. The data collected were analyzed using descriptive statistics such as: frequency count and simple percentages.

Conclusion

Following the analysis of data collected and findings made, the following conclusions were drawn:

- that the various ICT tools available for distance education in the National Open Universities in Edo State are: computers, internet service, and broadcast media and ICT laboratory
- that ICT is contributing strongly to distance learning education, ICT has removed barrier of accessing instructor that are far away, The use of ICT has enhanced access to quality Distance education delivery and ICT helps to improve cost efficiency in distance education
- that the teaching methods in distance education that support the use of Information and Communication Technology media are: Independent method, study centre, correspondence and lecture methods.
- that the challenges face ICT usage, integration and diffusion in Nigerian distance education programmes are: Lack of fund to purchase ICT facilities, students are not accessing ICT appropriately

student lack inadequate skill in using ICT for distance learning and there is an epileptic power supply

Recommendations

Based on the conclusion drawn from the findings, the following recommendations are hereby proffered:

- That ICT media should be uses in distance education to reach greater population of workers and school dropouts.
- That distance education providers and students/lecturers should accept the innovation in teaching approaches (methods) through the use of ICT media to enhance academic performance of learners (in-service).
- That government should equip NOUN and other institutions with ICT media for increase student enrolment, and effective distance learning programme.
- That NOUN should endeavour to adopt the innovation fully utilize ICT media and new teaching approaches as to gradually phase-out the obsolete weekend/evening face-to-face methods.

- That government of Nigeria and individuals should support the NOUN and other distant learning programmes provide enabling environment through the provision of power, ICT media and personnel for improve academic performance of students and the general literacy level in Nigeria.

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UNIVERSITY OF BENIN
FACULTY OF EDUCATION
DEPARTMENT OF ADULT AND NON-FORMAL EDUCATION

INTEGRATION OF INFORMATION COMMUNICATION TECHNOLOGY ON DISTANCE EDUCATION QUESTIONNAIRE (IICTDEQ)

Dear Respondent,

This questionnaire is solely for the purpose of a research. The researcher is carrying out a study on the: Integration of Information Communication Technology and Distance Education in Nigeria Universities (A case study of National Open University, Edo State).

You are therefore requested to kindly help as much as possible to supply the needed information. Your response shall be treated with outmost confidence.

Otasowie Precious

Please read the questions carefully and tick (√) in the box provided that corresponds to the answer of your choice. At the right hand column there are numbers representing how much you rate the statements. Indicate your response to the statements by ticking the appropriate number. Please do not tick 2 numbers for one statement.

SECTION A

PERSONAL DATA

1. Age: 18-24 years [ ] 25-31 years [ ] 32-38 years [ ] 39- 45 years [ ] 46 years and above [ ]
2. Marital Status: Married [ ] Single [ ] Divorced [ ] Widowed [ ]

SECTION B

INSTRUCTION: Kindly tick (√) where necessary using the following Keys

Strongly Agree (SA) = 4
Agree (A) = 3
Disagree (D) = 2
Strongly Disagree (SD) = 1

S/N	ITEMS	SA(4)	A(3)	D(2)	SD(1)
RQ1	**What are the various ICT tools available for distance education in the National Open Universities in Edo State?**				
1	We use computer at the centre				
2	We make use of internet services				
3	We also use broadcast media				
4	There is an ICT laboratory at the centre.				
RQ2	**What impact does the use of Information and Communication Technology media have on the practice of distance education?**				
5	ICT is contributing strongly to distance learning Education				
6	ICT has removed barrier of accessing instructor that are far away.				

7	The use of ICT has enhanced access to quality Distance education delivery				
8	ICT helps to improve cost efficiency in distance education				
RQ3	**What teaching methods in distance education support the use of Information and Communication Technology media?**				
9	Independent method support the use of ICT				
10	Study centre methods supports the use of ICT				
11	Correspondent methods support the use of ICT				
12	Lecture methods support the use of ICT				
RQ4	**What challenges face ICT usage, integration and diffusion in Nigerian distance education programs?**				
13	Lack of fund to purchase ICT facilities				
14	Students are not accessing ICT appropriately				
15	Student lack inadequate skill in using ICT for distance learning				
16	There is an epileptic power supply.				