Original Research Article

BARRIERS OF INFORMATION AND COMMUNICATION TECHNOLOGY ON DISTANT LEARNING PROGRAM AMONG NURSING STUDENTS IN THE NATIONAL OPEN UNIVERSITY ABEOKUTA, NIGERIA.

ABSTRACT

Distant learning program is a formalized teaching and learning system specifically designed to be carried out remotely by using electronic communication, with about 180,000 student as at 2013 in the National Open University Nigeria. This study explored the barriers of information and communication technology to distant learning program among nursing students in the National Open University, Abeokuta, Nigeria. A descriptive cross sectional survey design was used for this study. One hundred and seven (107) questionnaires were distributed to the respondents. Data was analysed using statistical package for social sciences and was presented using frequency, percentages and distribution tables. The result of the barriers of information and communication technology in distant learning program traveled that hows 100% agrees to poor funding from the government as a barrier to distant learning program, 72.9% agrees to lack of power supply in school and students dormitories as a barrier to distant learning program while 27.1% disagrees, 59.81% agrees to poor ICT inclination as a barrier to distant learning program while 40.19% disagrees, 71.98% agrees to poor Internet connectivity in school as a barrier to distant learning program while 28.04% disagrees, 84.11% agrees to school curriculum as a barrier to distant learning program while 15.89% disagrees, 100% agrees to software and license cost as a barrier to distant learning program, 57.01% agrees to lack of skills in designing course-wares as a barrier to distant learning program while 42.99% disagrees. This shows that there are some barriers of information and communication technology to distant learning program. It was therefore recommended that the government should provide enough information and communication technology media that will be used in disseminating course outlines to students and provision of skilled man power that will operate the available technology.

CHAPTER ONE

1.0 BACKGROUND OF STUDY

Information and Communication Technology (ICT) has opened a new visage to globalization in education (Aguele, 2014). In distant learning programs, ICT are being used for developing course material; delivering and sharing content; communication between learners, teachers and the outside world; creation and delivery of presentation and lectures; academic research; administrative support, student enrolment etc (Mondal and Mete,2012). Worldwide, the field of education has been enhanced by ICT, which have undoubtedly enhanced teaching, learning, and research (Yusuf, 2010). For example, Neeru (2009), in Indian universities and colleges indicated that, transformation of higher education in the country in terms of access, equity and quality is due to the usage of ICT in education. Distant learning sometimes called e-learning is a formalized teaching and learning system specifically designed to be carried out remotely by using electronic communication. Because distant learning is less expensive to support and is not constrained by geographic considerations where traditional education has difficulty operating (Pavel, 2015).

Information and communication technology is the study, design, development, application, implementation, support or management of computer based information systems. The term is commonly used as a system for computers and computer network, but it also encompasses other information distribution technologies such as television and telephones (Chandler, Daniel, Munday & Rod, 2011).

Africa has the highest demand for expansion of global distance learning with just under 45% of students enrolled in higher education, but only two institutions offering distance education (Adebayo, 2012). India has one of the fastest growing demands for more distant learning options, which over 25% of its student enrolled in distant education among its national, state, and open universities (Dondi, 2013).

According to Ramon (2011), the distant learning program was projected to provide access to about 200,000 students by 2013 in Nigeria. However, the National Open University Nigeria was able to provide access to over 180,000 by 2013 and this could be considered a tremendous improvement at increasing access through distant learning (Tenebe, 2013).

Challenges hampering the process of teaching and learning ICT courses in distant learning program for example, Lwoga (2012), identifies the following challenges: cost of acquiring, managing and maintaining ICT infrastructure and high cost of bandwidth and inadequate of competent technical staff. Others challenges include, lack of incentives to retain ICT experts, dynamic ICT curriculum, lack of awareness and poor attitude towards learning ICT, unreliable power supply, lack of internet connectivity, low budget, lack of capacity to implement existing policies and strategies, reluctant of some ICT instructors, costs of software and hardware, lack of central coordination and strategy, limited coverage of mobile phone networks and inadequate planning (Lwoga, 2012; Yonazi, 2012; Nihuka and Voogt, 2011; Swarts and Wachira, 2010).

This study aims at examining the critical challenges hindering the effectiveness of information and communication technology on distant learning program in the National Open University Abeokuta, Nigeria.

1.1 STATEMENT OF PROBLEM

From observation, some higher institutions/ universities has started offering online distant learning and quite a great number of student have started the program.

While most nurses recognize the benefit of the knowledge of information and communication technology and its application to improve the quality of health information and healthcare delivery, many continue to find it difficult due to some barriers of ICT encountered.

To ensure that nursing graduates are competent in the era of electronic health care delivery, it is essential to assess the barriers if ICT affecting undergraduate nursing students.

Inspite of the benefit of distant learning, overall problems that may hinder proper functioning in Nigeria include: Poor funding, power supply, lack of skills in designing course-wares, poor ICT penetration, internet connectivity, technophobia, school curriculum (Asogwa, 2010).

It was observed that nursing student in the National open university, Abeokuta face some challenges in the quest of their distanct learning program. Hence, the present study was focused on the identification of Barriers of information and communication technology in education.

1.2 OBJECTIVES OF STUDY

1.To identify the barriers in the use of ICTs in distant learning program in the National Open University Abeokuta, Nigeria.

2.To identify the types of information and communication technology media used by the National Open University Abeokuta, Nigeria.

3. To assess the effectiveness of ICT on distant learning program in the National Open University Abeokuta, Nigeria

1.3 RESEARCH QUESTIONS

1. What are barriers in the use of ICTs in distant learning program in the National Open University Abeokuta, Nigeria?

2.What are the types of information and communication technology media used by the National Open University Abeokuta, Nigeria?

3. What are the effectiveness of information and communication technology to distant learning program in the National Open University Abeokuta, Nigeria?

1.4 SIGNIFICANCE OF STUDY

This study will help in policy making in order to improve the learning process of people involved in distant learning program and also help intending students for distance learning programme to identify barriers of information and communication technology.

1.5 SCOPE OF THE STUDY

The study will be conducted among nursing students with the certificate of Registered Nurse (RN) who are involved in distance learning program in the National Open University Abeokuta, Nigeria.

1.6 OPERATIONAL DEFINITION OF TERMS

BARRIERS: Hinderance to the effective use of information and communication technology on distant learning program in the National Open University, Abeokuta, Nigeria

DISTANT LEARNING PROGRAM: An undergraduate program that uses information and communication technology to disseminate lecture, notes, assignment, test to the student.

INFORMATION AND COMMUNICATION TECHNOLOGY: An electronic media through which lecture (assignment, note, test, etc) are disseminated to student practicing distant learning program in the National Open University, Abeokuta, Nigeria.

NATIONAL OPEN UNIVERSITY NIGERIA: A tertiary institution that offers distant learning program to its student.

NURSING STUDENT: These are nurses with the certificate of registered nurse (RN) in the National Open University Abeokuta, Nigeria.

CHAPTER TWO

2.0 LITERATURE REVIEW

This chapter consist of review of conceptual framework, related literatures, impact of information and communication technology to distant learning program, limitating factors to distant learning program, ways of improving distant learning program, types of information and communication technology media, emperical study, theoretical framework.

2.1 CONCEPTUAL FRAMEWORK

The increasing need for education of those who cannot obtain it in the traditional way and the ease of acquiring the means of distance education has quite naturally led to institutional interest where previously there may have been little or none.

E-Learning is defined as the use of digital technologies and media to deliver support, and enhance teaching, learning, assessment and evaluation (Amitage & O'Leary, 2014). Conversely, according to Naisdu, 2013), e-Learning refers to the systematic use of networked information and communications technology in teaching and learning.The Commission on Technology and Adult Learning, (2015), defined e-Learning as Instructional content or learning and teaching experiences delivered by electronic technology.

Distance education is an educational process in which a significant proportion of the teaching is conducted by someone removed in space and/or time from the learner. Open

learning, in turn, is an organised educational activity, based on the use of teaching materials, in which constraints on study are minimised in terms either of access, or of time and place, pace, method of study, or any combination of these. Open and Distance learning is a type of learning whereby opportunity is given to people (young and elderly) who have passed the ages of admission into regular universities to continue their education. It is also directed at youngsters beyond school age, who are qualified and desire to earn a university degree (Mahapat, 2008). It can be deduced from these definitions that open and distance learning provides educational opportunities needed by anyone, anywhere and at anytime. It provides increased educational opportunities to a largerpopulation in different situations and needs. Both students and employees with distance problems can benefit because it is more flexible in terms of time and can be delivered anywhere.

The most unique characteristics of e-learning is the use of ITCs to teach. Therefore, ICT's have a myriad of implications for the learning and assessment processes.These implications include isolation of the learner from resources, support, and peers; the lack of face-to-face interaction with Course Coordinators; and delayed feedback (Masino, 2013).These factors have impart necessitated a large quantity and diversity of media and technology, which becomes a second distinguishing feature of e-Learning. In creating or mimicking the face-to-face environment, the instructor must rely on a variety of learning strategies that encompass ICTs.

Information and communication technology can be described as a complex varied set of goods, applications and services used for producing, distributing, processing and transforming information, telecoms, televisions' and radio broadcasting, hardware and software, computer services and electronic media (Ozorji, 2012). Information and communication technology represent a cluster of associated technologies defined by their functional usage in information access and communication of which one embodiment is the internet. Information and communication technology is often associated with high-tech devices, such as computers and software but it also encompasses more conventional technologies such as radio, television and telephone technology (UNESCO, 2013). Information and communication technology and computer is no

A literature review done by Freywot, Vovides, Talib, Mikhael, Ross, Wohltjen, Bedada, Korhumel, Koumare, & Scott (2013), in low income countries found that instructors rated information and communication technology in education as a good teaching tool; the challenges are access to computers for regular use, band width availability and the cost. The different types of information and communication technology used in learning are video conferencing, journal clubs, and research meetings to communicate with students at distant hospitals. He also stated that institutional support is critical to sustain e-learning programs. Investments are substantial and to be successful, it should be integrated with the curriculum. As confirmed by Asah (2013), computer literacy courses have not been part of the nursing curricular in the pst two decades.

2.1.1 The National Open University of Nigeria (NOUN)

The Open University is perhaps the most comprehensive of existing distance learning programmes in use today. Through it, universities bring their programmes across the country and beyond. Here in Nigeria, the National Policy on Education (1977) revised (1998), 2004 made provision for a National Open University. A three man planning committee was set up in 1981 to start work on the establishment of the university. Bill was passed by the senate. In spite of the tremendous amount of work that had gone on for the establishment of the NOUN, it never really took place until the Olu Obasanjo administration reactivated it again in the year 2002.The university has branches in several states of the federation and new branches are being established as the people embrace the usefulness of this form of learning.

The National Open University of Nigeria (NOUN) was established to provide functional, cost effective, and flexible learning education in order to address the persisting problem of access. In its operation so far, it has significantly helped to enhance access into higher education institutions in Nigeria. According to Ramon-Yusuf (2011), the Open and Distance Learning (ODL) was projected to provide access to about 200,000 students by 2013 in Nigeria. However, NOUN was able to provide access to over 180,000 by 2013 and this could be considered a tremendous improvement at increasing access through distance learning (Tenebe 2013).

2.1.2 Use of technology in distance education

The use of effective technology is critical to distance education. Yet an overview of academic activity field suggests many institutions have a long road to travel before they can offer successful Distance programs. Hartley (2016), 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%) 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, 2016). 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

2.1.3 Relevance of distant learning to Nigeria

There are long and short term benefits of embracing distance education in Nigeria (Olugbemiro, 2016). From the aforementioned, it is clear that there are obvious advantages to the government in using open and distance learning mode to complement the traditional methods of education in Nigeria. Amongst the many advantages which the government and the good people of Nigeria stand to benefit can be grouped into the following areas:

- Access and equity for comprehensive national development

- Alleviation of capacity constraints for economics, human resources and rural development

- Education for all especially to reduce or totally eliminate illiteracy and poverty

- Capacity building for human resource development especially in areas of acute deficiencies such as vocational and technical education, science and technology;

- Life-long and life-wide education in order to build a learning and knowledge-based society

- Access to, and capitalising on, emerging market opportunities both within the African region and globally

-Avenue for transforming our higher education sector to make our institutions respond to contemporary changes, developments and needs of Nigeria

- Providing the answer to the perennial problems of teacher education

- Appreciating, educating the citizens about, and using information and communication technologies (ICTs) to accelerate national and community development and provide an organised entry into the global information superhighway

- Generating spin-off effects on other sectors of national development such as raising development in telecommunications, information technology industry, broadcasting, postal and informatics and the development of many education related small-scale industries

- Alleviating budgetary constraints as expenditure on open and distance education has been shown in other countries to be as low as 30 per cent of the total cost of the conventional form of education beyond the take-off costs.

(Olugbemiro, 2016).

In the words of the Communiqué of the National Workshop on Distance Education in Nigeria which was held in September 2000 at Abuja, the advantages of distance education in a nutshell is that it ‘can enhance education as a form of human resource development, and satisfy the exceptionally large demand for education by our huge and rapidly expanding population which is still mainly rural, remote, under-represented, and marginalised through resources, location, economic and other reasons. Distance education will enable Nigeria to provide access for all and achieve equitable representation by ‘taking the distance out of education.’

2.1.4 Types of distant learning

It is forecasted that by 2020, every education or training program leading to a particular academic qualification will be available in three different modes namely part time, full time, and through distance learning. Often referred to distance education, distance learning can be described as a method of education that is received by a learner at another geographical location.

This form of education has increased access to learning opportunities to individuals who cannot attend conventional classes on a daily basis as well as to those with financial limitations. Besides that, distance learning serves as an option for people who wish to expand their knowledge base to boost their careers. By and large, it allows learners to learn wherever and whenever they are as well as helping students balance their education with career, family, and everything else they do in life.

In the recent past, distance learning has advanced considerably since the time of correspondence courses where the student would get study resources through email and post. Despite the fact correspondence courses do exist in today's distance education, it will soon be substituted by online courses thanks to the advent of computers, digitalization, and improved internet technologies. The latest developments in technology have typically led to an increase in the emergence of various types of distance learning, which include the following:

1. **Synchronous distance learning**

As we all know, 'synchronous' means'at the same time'. In this context, it is learning that involve live communication through either chatting online, sitting in a classroom, or even teleconferencing. It is one of the most acclaimed distance learning types that are most suitable for engaging in continuing education programs. Besides that, synchronous learning is preferable for degree programs that draw attention to communication such as counseling psychology, nursing, general education, and general psychology (Hrastinski, 2008).

2. **Asynchronous distance learning**

Again, 'asynchronous' typically means'not at the same time'. In this regard, it is a type of learning that has a strict set of deadlines, often a weekly time limit; however, it allows learners to learn at their own pace. It is also one of the most popular distance learning types because students can communicate with each other seamlessly through online notice/bulletin boards. Programs and courses with plenty of project and assignment work drive well in this format because it provides learners with enough duration to focus on the assigned work. Some of the regular degree programs offered by many institutions through the above distance learning type include marketing, legal assistant, advertising, healthcare administration, and much more (Hrastinski, 2008).

3. **Hybrid distance learning**

As the name suggests, hybrid distance learning combines asynchronous and synchronous learning to form a structure where learners are required to meet at a particular time in an internet chat-room or a classroom. With this platform though, students are required to complete their work at their own pace. Hybrid courses are often offered when learning institutions lack enough space to accommodate all their program course loads (Bonk, Graham, 2010).

4. **Electronic learning**

Electronic learning is one of the most popular distance learning types, often known as e-learning, which enables learners to access course material(s) on a computer. DVDs, CDs, and different computer-based tools are always used to deliver electronic learning courses.

5. **Fixed time online courses**

Fixed time online courses (or online learning) is another common type of distance learning that requires learners have access to the internet. As the name suggests, learners must log in to their official online learning site at a particular time. Most people find online learning more interactive than any other types of distance learning simply because the option allows them to communicate directly with instructors, tutors, and fellow students in real time with the help of live chats or teleconferencing apps. One of the best teleconferencing currently available is the ezTalks Cloud Meeting app. With this app, students can be to download study materials, submit assignments, complete assignments online, participate in virtual classes, and attend webinars, and so on (Sheldon, 2012)

6. **Correspondence learning**

As earlier stated, correspondence learning is considered as the earliest type of distance learning. With this option, students would receive learning materials (which include study guides, textbooks, assignments, and any other study materials) through the post. As soon as they get required these documents, they are required work through them at their own pace and in their own time. Depending on the learning institution chosen, learners may be given a chance to request instructor(s) or tutor(s) for help via telephone, e-mail, post, or instant messaging (Yoon, 2013)

7. **Open schedule online courses**

An open schedule online course is a type of online distance learning option that gives learners greatest amount of freedom to complete coursework provided through mailing lists, Internet-based textbooks, bulletin boards, and e-mail. At the start of classes, the learners are given a set of deadlines; however, they are allowed to work on their coursework at their own pace so long the complete the within the time limit. It is best learning options for learners who do not procrastinate or work independently.

2.1.5 Types of information and communication technology application used in education

These are Information and communication technology programs or software that instructs the hardware to perform certain task (Damkor, 2015). The most commonly used software programs in information and communication technology include;

Word processing

This is the ability to save and manipulate words. It is the most used information and communication technology application. It has numerous options which permit the user to specify the typeface, spacing and page layout. Documents can also be individualized by merging them with name and address. It can also include pictures, tables, charts and graphic designs.

Database

This is used to manage detailed information. Files here are saved as individual records that represent person, product or area information. Database programs have the ability to quickly search extremely large numbers of records and fields for commonalities and then help generate detailed and complete report.

Spreadsheet

This is used to manipulate words and numbers. Data here are arranged in rows and columns. This program can be used to perform many complicated manipulations of the data using formulas and directions built into it. Spreadsheet is used for managing budget, database programs, invoicing and research.

Communications

Communication devices require software to guide the computer in connecting to a remote device and know what data to send or receive. This program use one or more standard protocol depending on the form of communication such as file transfer, in order to communicate effectively with the distant. An important type of communication software is electronic mail (e-mail).

Presentation and graphic program

Presentation and graphic programs are software used to create charts, graphs, tables, pictures, videos, audio and other non-text files. Users of this program can create so-called slide shows for use in teaching and research presentations.

2.1.6 Barriers to distant learning program

In spite of the benefits of open and distance education, overall problems that may hinder proper functioning are better understood and taken care of. These problems are discussed as follows.

Poor funding: It is common knowledge that education is poorly funded in Nigeria. Lack of or low level of provision of the facilities for ODL programmes in the country is one major fallouts of poor funding. Investment in ODL is therefore low because the soft and hard-wares required are costly. It is very expensive to get some of the soft wares because they are not developed locally, they are developed in Europe and other developed countries to suit their own system and make their own living. This is a major impediment because according to Yusuf (2016), success in any educational policy is contingent on the involvement of all stakeholders and the sponsorship of funding agencies.

Power supply: The problem of power instability in Nigeria is perennial and has been a major setback for our technological development. Most ODL students that reside in cities and towns are faced with the problem of epileptic supply of power. Worse still, majority of them live in rural areas that are not connected to the national grid.

Lack of skills in Designing Course-wares: Instructional delivery in ODL is greatly affected by some facilitators' lack of knowledge and skills in designing and delivering courses in electronic format. This scenario is a fall out of the non ICT-compliant status of the facilitators.

Poor ICT Inclination: The result of this is that the cost of computers and other ICT resources are far beyond their reach. Therefore, like most African countries basic ICT infrastructures are inadequate. There is still low level of computer literacy among the Nigerians.

Internet connectivity: Statistics has shown that there is low level of internet connectivity in Nigeria. The cost of accessing internet is still very high in West Africa. Most ODL students make use of Cyber Café where they are made to pay so much on hourly basis despite the poor services and slow rate of the servers. To make bothstudents and teachers computer literate, the government should make projects that promote information and communications technology a priority.

Low teledensity: Another major challenge to open and distance learning programme delivery is teledensity. Access to unhindered use of ICT tools such as telephone and internet has been very low (Asogwa, 2013). Despite the advent of the Global System of Mobile (GSM) telecommunication, the use of ICT resources for educational purposes in general and open and distance learning in particular is still very low.

Technophobia: Most of the ODL students have no computer education background; hence they are afraid ofusing one. Some of them go to the extent of hiring experts at a cost to fill their admission, registration and other documents meant for them to fill online. However, the very few who have access to the computers do not know how to use it and take full advantage of its usage.

School Curriculum: Most of the students admitted have no information technology/computer education knowledge because it was not entrenched in the curriculum at their elementary and secondary education level. Not until recently when computer education is been introduced at elementary level and it is not yet a compulsory subject at the secondary level of our education.

Attitude of NOUN Students: ICT refutes independent learning and most of NOUN students are reluctant to take responsibility for their own learning. But they preferred to be spoon-fed at all times.

Software and License cost: It is very expensive to get some of the soft wares because they are not developed locally, they are developed in Europe and other developed countries to suit their own system and make their own living. The cost and even the interpretation of the software put off some of the NOUN students who showed interest.

Maintenance and Technical Support: There are few technical staff to maintain the system, this make it very expensive for few NOUN students that has a PC to maintain when a technical problem is noticed.

(Yusuf, 2016).

2.1.7 Types of information and communication media

There are varieties of technology that can be used in education. Each of these technologies has its own redeeming qualities and limitations and different situations call for different technologies (UNESCO, 2013).

Internet/web based training

As higher education moves deeper in to the electronic age, web based training has become a pertinent focus. As companies seek the means to bring several individuals together from across the country and to disseminate information quickly, the gaining of time and controlling cost are also central foci (Handy, 2012).

Web based training provides an environment where students and teachers access and study course materials online. It may involve the use life e-learning tools such as applications, internet, telephone, online white boards, discussion boards and charts and messaging programs that allow real-time interaction between instructors and learners. It can also be used to transmit text, graphics, images, animation or videos. The required tools for online learning include a personal computer (PC) and an internet connection.

CD ROM and DVD

Compact dick read only memory (CD ROM) is a form of compact disk that is read by optical means. The standard CD was introduced in 1982 for digital audio production. But because any type of information can be represented digitally, the standard CD was adopted

in the mid 1980's as a low cost storage and distribution medium for large computer programs, graphics and data bases. To handle the proliferation of ever large multimedia files (audio, graphic and video) in computer games, educational software and electronic encyclopedia, as well as higher definition movies for television entertainment system and expanded storage medium. 'Digital video disk (DVD)' was introduced in 1995 (Britannica, 2017).

CD ROM and DVD are very durable and quality that does not degrade after repeated use. However, scratching the surface or other abuse on the medium will prohibit it from been read by the CD ROM drive (in case of DVD a DVD Drive) is required to access the information. These may not be available to learners in developing countries.

Teleconferencing

A teleconference is a business meeting or educational session conducted among participants in different locations using telecommunication equipments. All types of teleconferencing required interactive communication (Joe, 2017)

Audio conferencing: this is voice only, it is also known as conference calling. The main advantage is that it allows for direct two-way interactions between participants. Discussions occur in real-time where learners can ask questions and instructors can respond immediately.

Audio graphic teleconferencing: this is also known as electronic white boarding. Both an audio and a data connection are necessary. This type is often used as distance learning and meeting that required narrowband communication which creates a realistic virtual classroom.

Web teleconferencing: This involves exchange of audio-video and graphics between computers. In this type participants view presentation or hear information simultaneously shared. It allows for instant communication with the presenter. Questions and comments can be typed by participants while presentation continues uninterrupted.

Video teleconferencing: This is a method of tele-conferencing that allows individuals to see and hear each other. It is flexible, convenient and allows real time two-way interaction between individuals in different places. All individuals involved in educational system e.g. teachers, students,, curriculum developers and specialist. It can be used for productions, teaching sessions, discussions, course delivery (in combination with other media) and student support. The main disadvantage is the relatively high cost needed to set it up and it is not readily available especially in remote areas and developing countries.

Interactive television

This is refers to as the instruction occurring over broadcast. It allows learners to receive live television instructions remotely away from the actual instructor. The main advantage is that instruction can be transmitted several different sides, and it's potentially reach large number of learners using existing broadcasting infrastructures. The main disadvantage is the high cost both at the broadcasting and the learner's side. This however can be offset if motivation can reach large amount of people.

2.1.8 Effectiveness of information and communication technology to distant learning program

Education in general has been transformed by the use of ICT. Experts are now talking about the 'School of the Future' (Taylor & Hogenbirk, 2016), which must grapple with the ever changing needs of Filipinos' increasingly inter-connected, globalized, information-based society. ICT is instrumental in facilitating the shift from "learning as a personal achievement to learning as a result of a global social process" (Taylor & Hogenbirk, 2016).

With the advent of the information and communication technology (ICT) revolution, the academic institutions are now providing a more flexible and open learning environment to the students. Along with the print material, the audio audio/video broadcasting, audio/video teleconferencing, computer aidedinstruction, e-learning/ online-learning, computer broadcasting/web casting etc are now used for the distance and open learning education system and this helps in breaking the traditional barriers of time and place associated with the delivery of education and helps the parent institutions to implement distance education in an easier way and makes the education a life long process in real sense (Asam, 2015).

The technology used to deliver instructional content has influenced instructional design methods used. While the pedagogy has always been the central consideration, the delivery characteristics of the technology used is also on the minds of instructional designers charged with designing pedagogically sound DE learning materials. The 'chunking of lessons,' for instance, and the level at which learners should interact with the course contents are major design considerations – considerations which must fit both the content and the attributes of the technology. Depending on the technology used, the interaction by which to engage learners will vary. Loveless and Ellis (2014), for example, advise that "it is not enough to use technology to do the same types of activities; educators must also consider the new ways of thinking that the technology affords" (page number for direct quotes please). This means educators must think about pedagogy and ICT from within a systems perspective – not as discrete variables independent from one another.

ICT in use in ODL is also re-shaping universities' entire organizational structures. Westbrook (2013), for example, observed that the introduction of ICTs in education has resulted in the changes in four core areas: 1) curriculum; 2) role of teacher and students; 3) organizational structure; and 4) learning environment. Given that a growing number of

transactions now take place online at a distance, appropriately automated systems for recording these transactions, tracking them, keeping and retrieving student records, and so forth, must be supported by holistic policies and procedures that take into account all academic-related activities.

Librero (2016), observed that conventional universities are now using ICTs to achieve 'blended learning' environments, which blend traditional face-to-face classroom delivery with distance delivery. This blended approach has "increased the sources of learning materials that learners must access under blended learning strategies".

Use of ICT is also reshaping university cultures. A school's culture is defined by its pattern of relationships and of management of resources. These patterns of relationships and methods of management are, in turn, shaped by its overarching educational philosophy, expectations from the community it serves, its moral culture, political skills of its leadership, and curriculum (Azinian, 2011). In recent years, the culture of teaching has shifted from that of being the 'sage on center stage,' to that of being a learned facilitator, a dynamic called 'learner-centered' pedagogy. Garcia (2012), for example, observed that "online tutors have greater responsibility to ensure that all voices are recognized and respected and must consider all opinions when integrating messages or making concluding statements". Rapatan (2014), further notes that teachers must aim to be "literate in the new technologies and retrain themselves in pedagogy for them to understand how to make technology support conceptual formation and change in students".

Clearly, the culture of learning has shifted from the culture of students passively listening in a classroom where attendance matters, to the culture of proactive reading, encoding and decoding anytime, anywhere. Garcia (2012), also observed that online discussion has had a democratizing effect on the learning process, a dynamic referred to as an "egalitarian environment" (Brown, 2017, as cited in Garcia, 2012). In an online learning environment, adult learners must take greater responsibility over their own learning paths by sharing their vast array of experiences and knowledge with others in their class.

The growth of ICT in education has given rise to new concepts and realities that are only now becoming mainstream. The concept of 'socialization' in DE settings, for instance, is often technology-mediated and for many students, the only mode of socialization available to them. Time and space ceased to matter in terms of social and transactional distances. The concept of the 'teacher' has fundamentally challenged to include various elements like tutors, LMSs, technical support, learning packages – all further evidence of ICTs influence in education

2.2 THEORETICAL FRAMEWORK

Unified theory of acceptance and use of technology

The unified theory of acceptance and use of technology (UTAUT) proposed and tested by Venkatesh, Moris and Davis (2003) is the theory researcher use in order to explore and investigate behaviors of individuals towards use and acceptance of technology. The UTAUT was formulated using elements from across eight models.

UTAUT provides a useful tool for managers needing to access the likelihood of success for new technology introduction and helps them understand the drivers of acceptance in order to proactively design interventions (including training, marketing e.t.c) targeted at population of users that may be less inclined to adopt and use new systems.

The model considers four key constructs as direct determinants of user acceptance which includes effort expectancy, performance expectancy, social influence and facilitating conditions. Similarly, age, gender, experience and voluntariness of use also affect the actual usage of information and communication technology.

Performance expectancy is the degree to which an individual believes that the system will help him to attain the best education

Effort expectancy is the degree of ease associated with the use of information and communication technology

Social influence is the degree to which an individual perceives that important others believe he should use the new system

591 **Facilitating conditions** is the degree to which an individual believes that an organizational
592 and technical infrastructure exist to support use of the system.

593 The relevancy of UTAUT to this study is based on the fact that ICT and the related
594 technologies will be used in teaching and learning process provided that there is greater
595 performance expectancy, ease of use, social influence and availability of resources.

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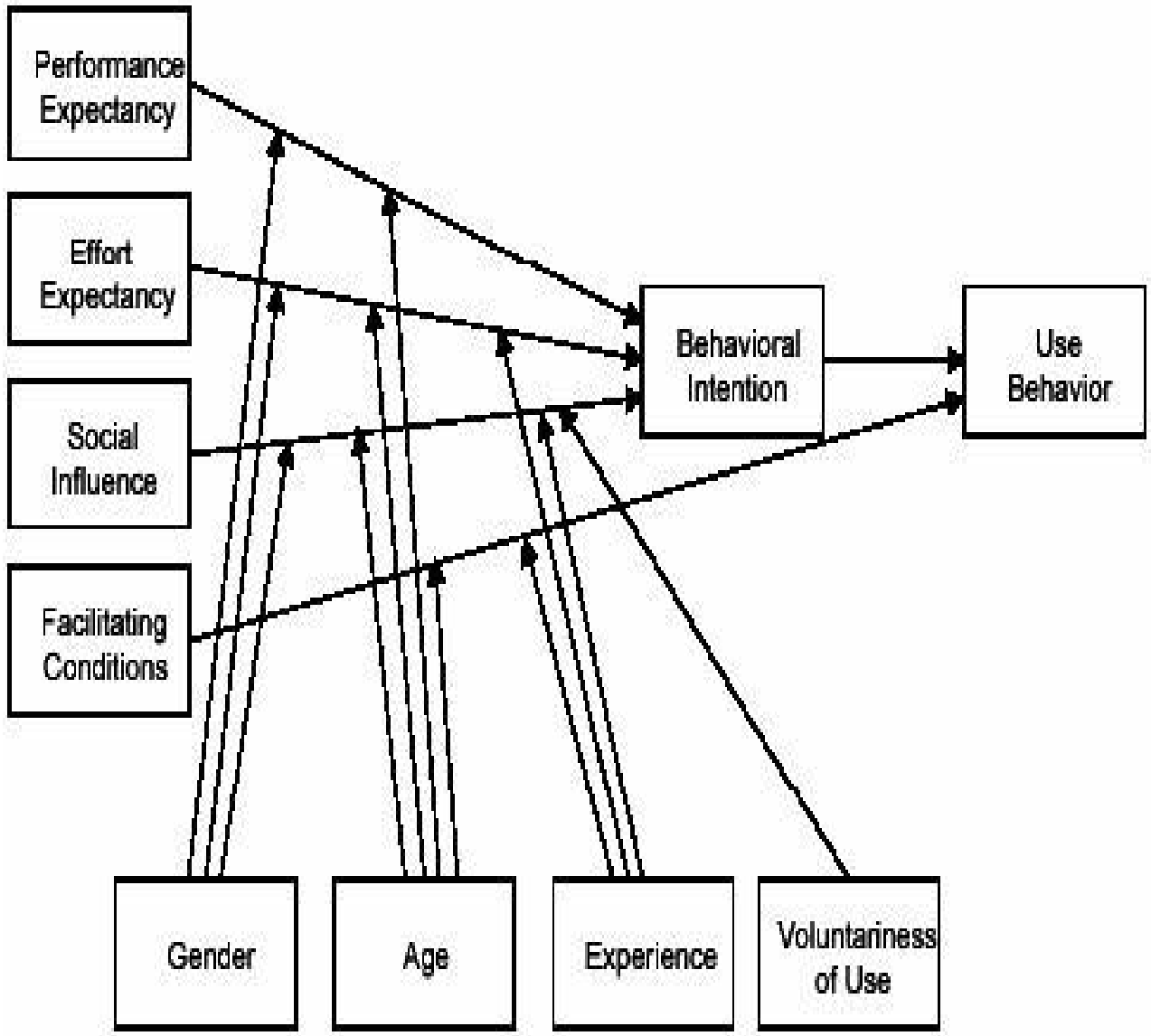

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603 UNIFIED THEORY OF ACCEPTANCE AND USE OF TECHNOLOGY (UTAUT) (VANKATESH, MORIS

604 & DAVIS, 2003)

605 **2.3 EMPIRICAL STUDY**

606 Information and Communication Technology (ICT) is an umbrella term that includes any

607 communication device or application, encompassing: radio, television, cellular phones,

608 computer, and network hardware and software, satellite systems and so on, as well as the

various services and applications associated with them, such as videoconferencing and distance learning (Mondal and Mete, 2012). Worldwide, the challenges for teaching ICTare noted to be barriers which hinder the learning and teaching processes of ICT related subject in HLIs. A study of Aguele (2012) in Nigeria indicates that the implementation of ICT in Nigerian universities is confronted by a number of problems including lack of enough fund (73.5%), lack adequate technical expertise (76.5%) and lack of enough bandwidth (69%). Khan et al. (2012) study in Bangladesh reveals that the main barriers to the introduction of ICT into education in developing countries is lack of resources within educational institutions, lack of computers (both hardware and software), lack of sufficient computer experience for both students and instructors and other ICT-supported tools in the classrooms. Furthermore, UNESCO (2009) points out four common mistakes which happen when introducing ICTs into teaching; installing learning technology without reviewing students' needs and content availability, imposing technological systems from the top down without involving faculty and students, using inappropriate content from other regions of the world without customizing it appropriately, and producing low quality content that has poor instructional design and is not adapted to the technology in use.

According to Kutluk (2012), in his study to measure distance education students' satisfaction level and efficiency in education quality. It is thought that students are satisfied with this education system which provides great convenience in time and cost. The deficiencies and defective points of distance education are also detected with this study and suggestions are offered to practitioners.

In Tanzania, studies of Kajuna (2009) and Ndume (2008) reveal the major challenges faced in technology instruction in HLIs to include: insufficient of technical and academic staff

with appropriate skills of technology use, unsupportive mindset, poor electricity connectivity and reliability, poor telecommunication network, expensive cost of internet access, low internet speed, lack of content that meet user's expectation, and traditional culture of education and learning styles. Also a study conducted by Nyandara (2012) the usage of ICT tools for learning was noted to have discrepancy between Tanzania and China whereby, the access to videotapes bystudents scored 40% in Tanzania compared with 88% CCDE-China and 18.2% for instructors in Tanzania compared with 66% of instructors at CCDE-China. In another case, DVDs/CDs are accessed by majority of CCDE students and instructors (about 90% and above) compared with only 60% of students and 54.5% instructors from Tanzania. Videoconferencing is less accessed by Tanzania students (10%) and instructors (13.6%) compared with students (81%) and instructors (77%) from CCDE

CHAPTER THREE

3.0 RESEARCH METHODS

The chapter discuss the methods that will be used to carry out the research project and it includes the research design, study setting, target population, sample and sampling techniques, method of data collection, method of data analysis and the reliability and validity of the research instrument.

3.1 RESEARCH DESIGN

A descriptive research design will be used to evaluate the research problem. This choice is influenced by the statement of problems, research questions and objectives and also the nature of data that will be gathered in the course of the research.

3.2 RESEARCH SETTING

This study will be conducted in the National Open University, Abeokuta, Nigeria. NOUN is a Federal open and distance learning institution. The NOUN, Abeokuta was founded in July 1983 and was suspended in 1984 by the federal military government. It was later resuscitated in 2002 by the civilian regime of chief Olusegun Obasanjo. The study director of NOUN, Abeokuta is Prof Ibrahim Tunde Salawu. The NOUN, Abeokuta instructional delivery system is modelled after that of Indira Ghandi National Open University (IGNOU), India. It offers over 50 programmes and 750 courses. It facilities include E - library, radio station (at frequency 105.9 NOUN FM) and E - courseware.

The NOUN, Abeokuta Logo is the soul of the institution. it is open at the top to emphasize the open nature of the university. It carries the national emblem to confirm that it is a national university; the open book at the centre indicates that you can work and learn at the same time and that education can even be brought to you at your workplace. The colours of green and white are the national colours and the red colour carrying the name of the university underscores the distinctiveness of the institution in Nigeria. The NOUN, Abeokuta motto is work and learn.

3.3 TARGET POPULATION

The target population of this study will be Nursing student studying, using the distant learning in the National Open University Abeokuta, Nigeria.

3.4 SAMPLING SIZE DETERMINATION

The sample technique will be analyzed using the Taro Yamane Rule which is stated below:

$$X = \frac{N}{1 + N(e)2}$$

Where N = Total Number of target population

1 = Constant

e = value constant of 0.05 (alpha level)

Total number of nursing students =800

Therefore $X = 800/1 + 800\ (0.09)2$

$X = 800/1 + 800\ (0.0081)$

$X = 800/1 + 6.64$

$X = 800 / 7.64$

$X = 106.95$

$X = 107$

Total number of sample size for the study will be 107

3.5 SAMPLING TECHNIQUE

Systematic sampling technique will be adopted for this study. Using the formula of the systematic sampling technique which is;

K = N/n

Where N = The total number of student

n = The sample size required

3.6 INSTRUMENT FOR DATA COLLECTION

Data for this study will be collected using the researcher designed questionnaire which will be derived from the literature review and administered to the respondents. The questionnaire will be divided into 4 sections;

SECTION A: Demographic data.

SECTION B: Barriers to distant learning program.

SECTION C: Types of information and communication media used in National Open University Abeokuta, Nigeria.

SECTION D: Effectiveness

of information and communication technology to distant learning program

3.7 VALIDITY OF THE INSTRUMENT

The instrument for data collection will be self constructed and be submitted to the supervisor for scrutiny and approval to ensure face, content and construct validity of the instrument.

3.8 RELIABILITY OF THE INSTRUMENT

Reliability will be ensured through pilot study of the instrument on ten (10) nursing students in Babcock University Ilisan - Remo. Inter-rater reliability method will be used to test for the reliability of the questionnaire.

3.9 METHOD OF DATA COLLECTION

The instrument that is designed to be used for the data collection for this study is questionnaire and will be administered to the respondent after gaining their individual consent. Prior to the administration of the questionnaire, the aim and objectives of this study will be clearly stated to the participant and their informed content will be obtain. They will also be assured that the data collected will be used mainly for academic purpose.

Data will be collected through the administration of questionnaire by the researcher with an assistant directly to the respondents (Nursing students) in the National Open University, Abeokuta, Nigeria. Four (4) days will be used in administering the question by distributing the questionnaire to each year on different days, this will be done to prevent mix up in the questionnaire administered.

Each questionnaire will be numbered to prevent mix up, and the researcher will ensure that all questionnaires are answered without leaving any question unanswered.

726 **3.10 DATA ANALYSIS**

727 Computerized analysis for data obtained from the respondent will be carried out using
728 statistical package for social science (SPSS) version 20 and the data will be presented using
729 frequency tables, bar charts, percentages and figures.

730 **3.11 ETHICAL CONSIDERATIONS**

731 This study will be conducted after a letter of permission signed by the researchers
732 supervisor will be delivered to the Ethical Review Board of the institution telling them about
733 the purpose.

734 The respondents will be informed about the purpose, aims and objectives of the study
735 and they will be allowed to make informed decision on whether to participate or not. They
736 will also be assured of complete confidentiality and anonymity and consent will be obtained
737 before the questionnaires will be administered.

738 Respondents will be assured that they can withdraw from the study at anytime without
739 implications.

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CHAPTER FOUR

4.0 Results

This chapter deals with presentation of data analysis and of the research question and objectives. The analysis and interpretation of the data collected through questionnaire and was distributed to 107 respondents. The data collected were analyzed and presented using frequency tables, bar charts and pie charts.

4.1 Presentations of results using tables and charts

4.1.1 Section A: Respondents socio demographic data

N = 107

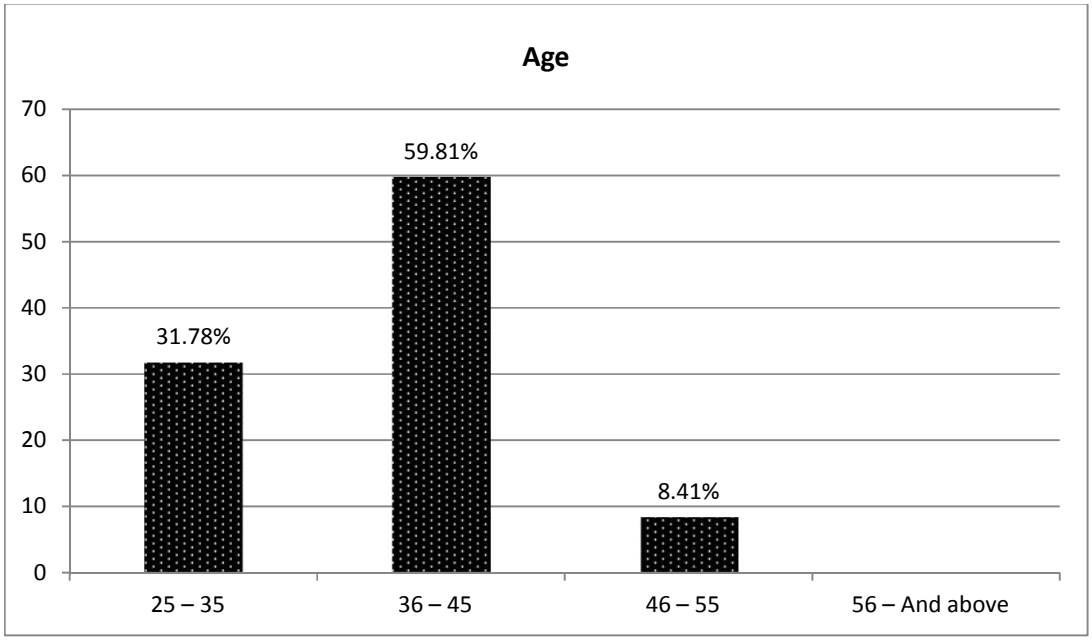
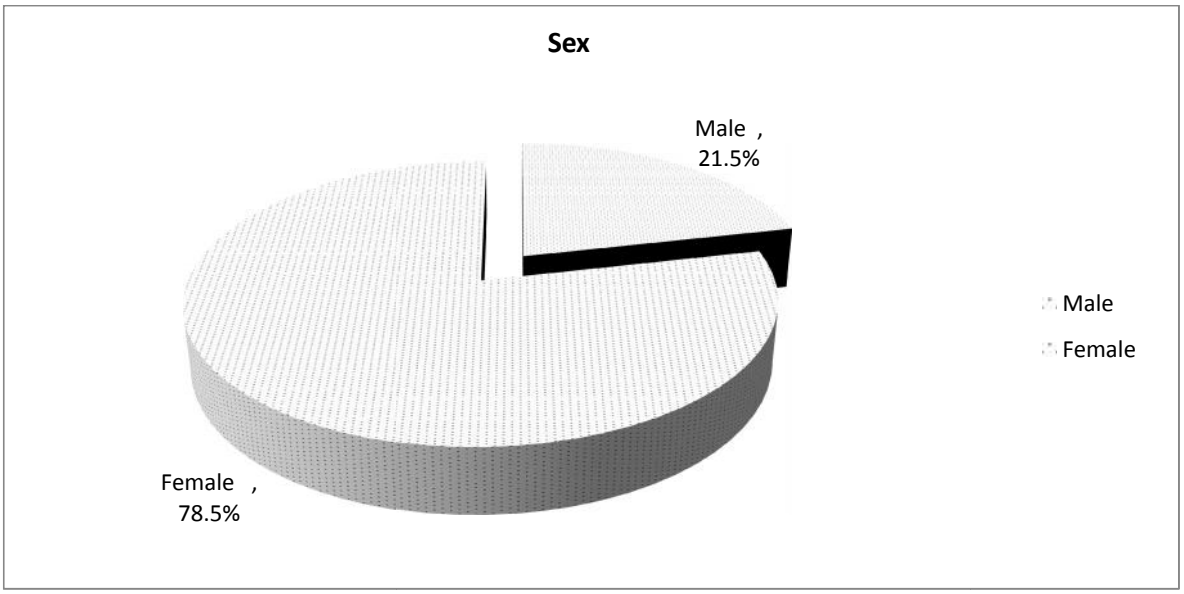


Figure 4.1: Age range

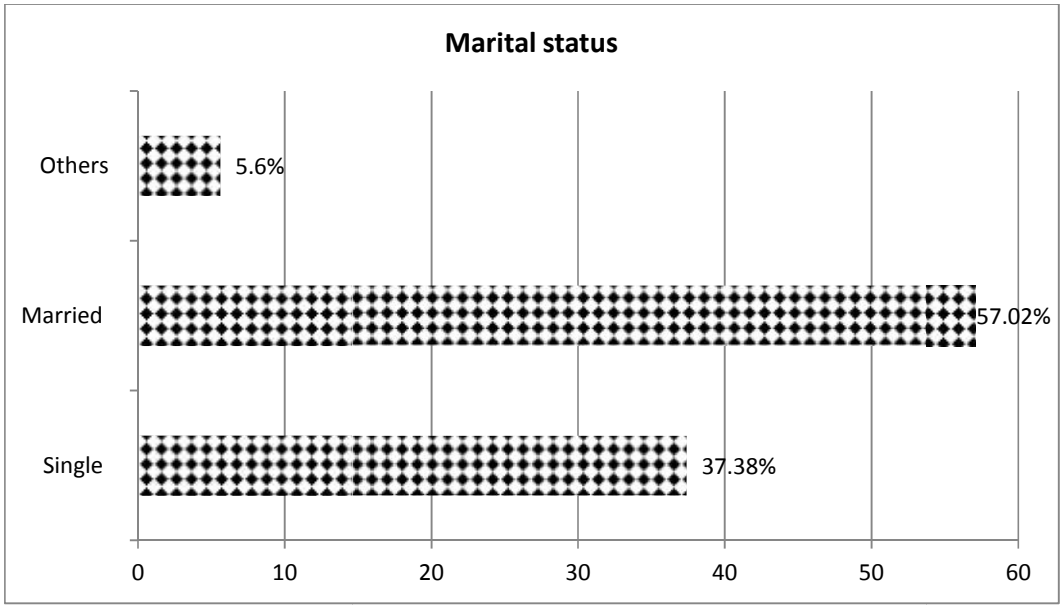
Figure 4.1; shows that respondents of ages 36-45 years constitute the highest percentage (59.81%), 31.78% are between the range of 25-35years, 46-55 years constitutes 8.41%, while 56 years and above constitute 0%



764

765 **Figure 4.2: Gender**

766 Figure 4.2; shows that majority of respondent are females (75.5%), while 21.5% are males.

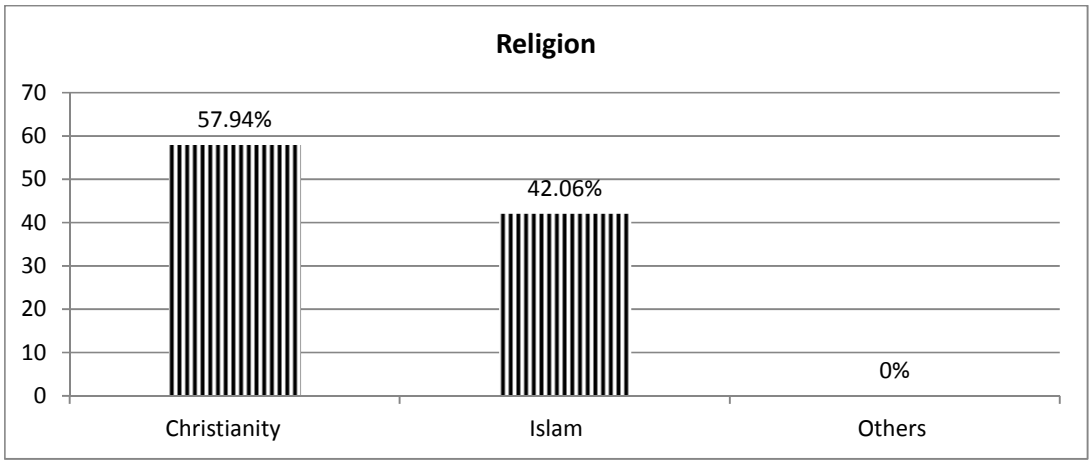


767

768 **Figure 4.3: Marital status**

769 Figure 4.3; shows majority of respondent (57.02%) are married, 37.38% are single, while

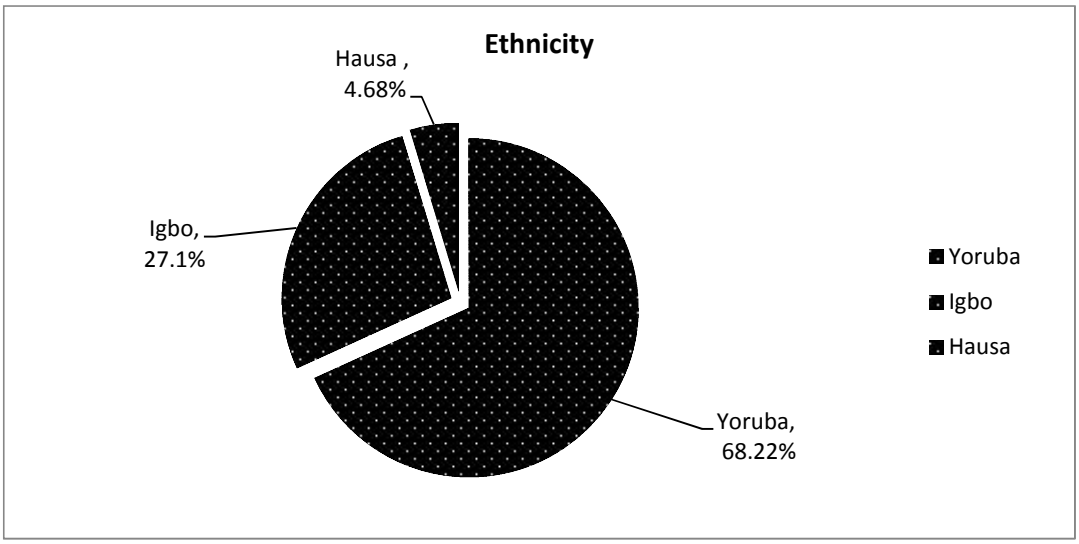
770 5.6% constitute others



771

772 **Figure 4.4: Religion**

773 Figure 4.4; shows that majority of the respondent are Christian (57.94%) while Islam
774 constitute 42.06%



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776 **Figure 4.5: Tribe**

777 Figure 4.5; shows majority of the respondents are Yoruba (68.22%), 27.1% are Igbo, while
778 4.68% are Hausa.

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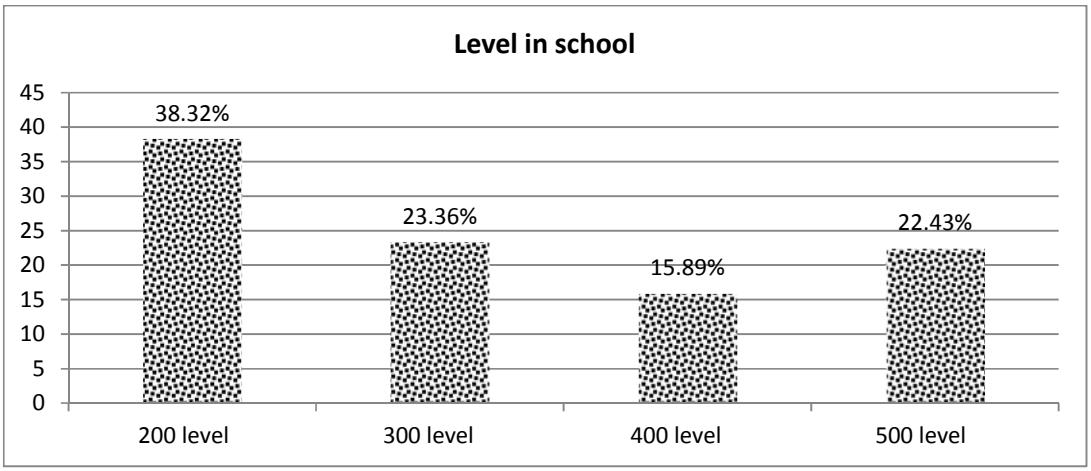

Figure 4.6: Level in school

Figure 4.6; shows 38.32% are in 200 level, 23.36% are in 300 level, 15.89% are in 400 level while 22.43% are in 500 level.

SECTION B: Barriers to distant learning program

Table I: Questions on barriers to distant learning program

S/N	STATEMENT	SA	A	D	SD	Total agree	Total disagree	Result	Renark
7.	Poor funding from the government	70 (65.42%)	37 (34.58%)	0 (%)	0 (%)	107 (100%)	0 (%)	3.7	Positive
8.	Lack of power supply in school and students dormitories	35 (32.71%)	43 (40.19%)	16 (14.95%)	13 (12.15%)	78 (72.9%)	29 (27.1%)	2.9	Positive
9.	Poor ICT inclination	30 (28.04%)	34 (3.77%)	28 (26.17%)	15 (14.02%)	64 (59.81%)	43 (40.19%)	3.6	Positive

10.	Poor Internet connectivity in school	45 (42.05 %)	32 (29.9 1%)	11 (10.28 %)	17 (17.76 %)	77 (71.98 %)	27 (28.04 %)	3.0	Positive
11.	School curriculum	63 (58.88 %)	27 (25.2 3%)	10 (9.35%)	7 (6.54%)	90 (84.11 %)	17 (15.89 %)	3.4	Positive
12.	Software and license cost	59 (55.14 %)	48 (44.8 6%)	0 (%)	0 (%)	107 (100%)	0 (%)	3.6	Positive
13.	Lack of skills in designing course-wares	40 (37.38 %)	21 (19.6 3%)	31 (28.97 %)	15 (14.02 %)	61 (57.01 %)	46 (42.99 %)	2.8	Positive

Table i; shows 100% agrees to poor funding from the government as a barrier to distant learning program, 72.9% agrees to lack of power supply in school and students dormitories as a barrier to distant learning program while 27.1% disagrees, 59.81% agrees to poor ICT inclination as a barrier to distant learning program while 40.19% disagrees, 71.98% agrees to poor Internet connectivity in school as a barrier to distant learning program while 28.04% disagrees, 84.11% agrees to school curriculum as a barrier to distant learning program while 15.89% disagrees, 100% agrees to software and license cost as a barrier to distant learning program, 57.01% agrees to lack of skills in designing course-wares as a barrier to distant learning program while 42.99% disagrees.

SECTION C: Types of information and communication technology media used in national open university, abeokuta, nigeria.

Table II: Questions on types of information and communication technology media used in national open university, abeokuta, nigeria.

S/N	STATEMENT	YES	NO

14	Internet / web based training	107 (100%)	0 (%)
15	CD Rom	30 (28.04%)	77 (71.96%)
16	Teleconferencing	92 (85.98%)	15 (14.02%)
17	Audio conferencing	18 (16.82%)	89 (83.18%)
18	Video conferencing	0 (%)	107 (100%)
19	Interactive television	0 (%)	107 (100%)
20	Drop box	0 (100%)	107 (100%)
21	Conferences	80 (74.77%)	27 (25.23%)
22	WhatsApp group	107 (100%)	0 (%)
23	ICT Educational software's / media.	86 (80.37%)	21 (19.67%)
24	DVD	23 (21.5%)	84 (78.5%)

Table ii; shows 100% of the student makes use of Internet / web based training, 28.04% makes use of CD Rom while 71.96% does not, 85.98% of the student makes use of Teleconferencing while 14.02% do not, 83.18% makes use of Audio conferencing while 16.82% do not, 100% does not make use of Video conferencing, 100% does not make use of Interactive television, 100% does not make use of drop box, Drop box, 74.77% of the student makes use of confrences while 25.23% does not, 100% of the student makes use of whatsApp group, 80.37% of the student makes use of ICT Educational software's / media while 19.67% do not, 21.5% of the student makes use of DVD while 78.5% do not.

SECTION D: Effectiveness of information and communication technology on distant learning program

Table III: Questions on effectiveness of information and communication technology on distant learning program

S/N	STATEMENT	SA	A	D	SD	Total agree	Total disagree	Result	Remark
25.	Information and communication technology has an impact on distant learning program	97 (90.65 %)	10 (9.35%)	0 (%)	0 (%)	107 (100%)	0 (%)	3.9	Positive
26.	With the advent of ICT, the academic institution now provide a more flexible and open distant learning environment to the student	47 (43.93 %)	45 (42.05 %)	13 (12.15 %)	2 (1.87 %)	92 (85.98 %)	15 (14.02%)	3.3	Positive
27.	The introduction of ICT in education has result in changes of the learning environment	52 (48.60 %)	29 (27.10 %)	16 (14.95 %)	10 (9.35 %)	81 (75.7%)	26 (24.3%)	3.1	Positive
28.	The advent of ICT in education has result in changes of the role of teachers and students	37 (34.58 %)	54 (50.46 %)	8 (7.48 %)	8 (7.48 %)	91 (85.04 %)	16 (14.96%)	3.1	Positive
29.	The use of ICT has reshaped university cultures	57 (53.27 %)	20 (18.69 %)	20 (18.69 %)	10 (9.35 %)	77 (71.96 %)	30 (28.04%)	3.1	Positive
30.	Technology used to deliver instructional content influence instructional design	62 (57.94 %)	32 (29.91 %)	9 (8.41 %)	4 (3.74 %)	94 (87.85 %)	13 (12.15%)	3.4	Positive

	methods used								

Table iii; shows 100% agrees that information and communication technology has an impact on distant learning program, 85.98% agrees that with the advent of ICT, the academic institution now provide a more flexible and open distant learning environment to the student while 14.02% disagrees, 75.7% agrees that the introduction of ICT in education has result in changes of the learning environment while 24.3% disagrees, 85.04% agrees that the advent of ICT in education has result in changes of the role of teachers and students while 14.96% disagrees, 71.96% agrees that the use of ICT has reshaped university cultures while 28.04% disagrees, 87.85% agrees that technology used to deliver instructional content influence instructional design methods used while 12.15% disagrees.

4.2 Answering of research question

Question 1: What are barriers in the use of ICTs in distant learning program in the National Open University Abeokuta, Nigeria?

From the data analyzed, it was gathered that 100% agrees to poor funding from the government as a barrier to distant learning program, 72.9% agrees to lack of power supply in school and students dormitories as a barrier to distant learning program, 59.81% agrees to poor ICT inclination as a barrier to distant learning program, 71.98% agrees to poor Internet connectivity in school as a barrier to distant learning program, 84.11% agrees to school curriculum as a barrier to distant learning program, 100% agrees to software and license cost as a barrier to distant learning program, 57.01% agrees to lack of skills in designing course-wares as a barrier to distant learning program.

Therefore, respondent were of the opinion that , the barriers listed affect the use of ICTs in distant learning program in the National Open University Abeokuta, Nigeria

Question 2: What are the types of information and communication technology media used by the National Open University Abeokuta, Nigeria?

From the data analyzed, it was gathered that 100% of the student makes use of Internet / web based training, 71.96% does not make use of CD Rom while, 85.98% of the student makes use of Teleconferencing, 83.18% does not make use of Audio conferencing, 100% does not make use of Video conferencing, 100% does not make use of Interactive television, 100% does not make use of drop box, 74.77% of the student makes use of confrences, 100% of the

student makes use of whatsApp group, 80.37% of the student makes use of ICT Educational software's / media, 78.5% of the student does not make use of DVD.

Therefore, respondent were of the opinion that Internet / web based training, teleconferencing, confrences, ICT Educational software's / media and whatsApp group are the most common types of information and communication technology media used by the National Open University Abeokuta, Nigeria.

Question 3: What are the effectiveness of information and communication technology to distant learning program in the National Open University Abeokuta, Nigeria?

From the data analyzed, it was gathered that 100% agrees that information and communication technology has an impact on distant learning program, 85.98% agrees that with the advent of ICT, the academic institution now provide a more flexible and open distant learning environment to the student, 75.7% agrees that the introduction of ICT in education has result in changes of the learning environment, 85.04% agrees that the advent of ICT in education has result in changes of the role of teachers and student, 71.96% agrees that the use of ICT has reshaped university cultures, 87.85% agrees that technology used to deliver instructional content influence instructional design methods used.

Therefore, information and communication technology has positive effect on distant learning program in the National Open University Abeokuta, Nigeria.

CHAPTER FIVE

5.0 Introduction

This chapter consists of discussion of findings, conclusion, summary, implication for nursing, limitation of the study, recommendation, suggestion for further study.

5.1 Discussion of Findings

Respondents of ages 36-45 years constitute the highest percentage (59.81%), Majority of the respondent are females (75.5%). Majority of respondent (57.02%) are married, 57.94% are Christian while Islam constitute 42.06%. 38.32% of respondents are in 200 level, 23.36% are in 300 level, 15.89% are in 400 level while 22.43% are in 500 level which implies that respondnets are all student of the school.

Respondent were of the opinion that the barriers listed affect the use of ICTs in distant learning program in the National Open University Abeokuta, Nigeria. From the data

analyzed, it was gathered that 100% agrees to poor funding from the government as a barrier to distant learning program. This finding was supported by (Lwoga, 2012; Yonazi, 2012; Nihuka and Voogt, 2011; Swarts and Wachira, 2010), who said Challenges hampering the process of teaching and learning ICT courses in distant learning program for example includes the following challenges: cost of acquiring, managing and maintaining ICT infrastructure and high cost of bandwidth and inadequate of competent technical staff. Others challenges include, lack of incentives to retain ICT experts, dynamic ICT curriculum, lack of awareness and poor attitude towards learning ICT, unreliable power supply, lack of internet connectivity, low budget, lack of capacity to implement existing policies and strategies, reluctant of some ICT instructors, costs of software and hardware, lack of central coordination and strategy, limited coverage of mobile phone networks and inadequate planning. This finidng was also supported by Yusuf (2016), who said It is common knowledge that education is poorly funded in Nigeria. Lack of or low level of provision of the facilities for ODL programmes in the country is one major fallouts of poor funding. Investment in ODL is therefore low because the soft and hard-wares required are costly. It is very expensive to get some of the soft wares because they are not developed locally, they are developed in Europe and other developed countries to suit their own system and make their own living. This is a major impediment because according to success in any educational policy is contingent on the involvement of all stakeholders and the sponsorship of funding agencies. This finding was also supported by Aguele (2012), who carried out a study in Nigeria indicates that the implementation of ICT in Nigerian universities is confronted by a number of problems including lack of enough fund (73.5%), lack adequate technical expertise (76.5%) and lack of enough bandwidth (69%). 72.9% agrees to lack of power supply in school and students dormitories as a barrier to distant learning program. This finding was also supported by Kajuna (2009) and Ndume (2008), who carried out a study In Tanzania, studies reveal the major challenges faced in technology instruction in HLIs to include: insufficient of technical and academic staff with appropriate skills of technology use, unsupportive mindset, poor electricity connectivity and reliability, poor telecommunication network, expensive cost of internet access, low internet speed, lack of content that meet user's expectation, and traditional culture of education and learning styles. 59.81% agrees to poor ICT inclination as a barrier to distant learning program. This finding was also supported by Khan et al. (2012), who carried out a study in Bangladesh reveals that the main barriers to the introduction of ICT into education in developing countries is lack of resources within educational institutions, lack of computers (both hardware and software), lack of sufficient computer

experience for both students and instructors and other ICT-supported tools in the classrooms. This finding was also supported by Yusuf (2016), who said the result of this is that the cost of computers and other ICT resources are far beyond their reach. Therefore, like most African countries basic ICT infrastructures are inadequate. There is still low level of computer literacy among the Nigerians. 71.98% agrees to poor Internet connectivity in school as a barrier to distant learning program. This finding was supported by Yusuf (2016), who said statistics has shown that there is low level of internet connectivity in Nigeria. The cost of accessing internet is still very high in West Africa. Most ODL students make use of Cyber Café where they are made to pay so much on hourly basis despite the poor services and slow rate of the servers. To make bothstudents and teachers computer literate, the government should make projects that promote information and communications technology a priority. 84.11% agrees to school curriculum as a barrier to distant learning program. This finding was supported by (Yusuf, 2016), who said most of the students admitted have no information technology/computer education knowledge because it was not entrenched in the curriculum at their elementary and secondary education level. Not until recently when computer education is been introduced at elementary level and it is not yet a compulsory subject at the secondary level of our education. 100% agrees to software and license cost as a barrier to distant learning program. This finding was supported by Yusuf, (2016), who said It is very expensive to get some of the soft wares because they are not developed locally, they are developed in Europe and other developed countries to suit their own system and make their own living. The cost and even the interpretation of the software put off some of the NOUN students who showed interest. This finding was also supported by Freywot et al (2013), who said in low income countries that instructors rated information and communication technology in education as a good teaching tool; the challenges are access to computers for regular use, band width availability and the cost. 57.01% agrees to lack of skills in designing course-wares as a barrier to distant learning program. This finding was supported by Yusuf (2016), who said instructional delivery in ODL is greatly affected by some facilitators' lack of knowledge and skills in designing and delivering courses in electronic format. This scenario is a fall out of the non ICT-compliant status of the facilitators.

Therefore, respondent were of the opinion that Internet / web based training, teleconferencing, confrences, ICT Educational software's / media and whatsApp group are the most common types of information and communication technology media used by the National Open University Abeokuta, Nigeria. From the data analyzed, it was gathered that,

71.96% does not make use of CD Rom while, 85.98% of the student makes use of Teleconferencing, 83.18% does not make use of Audio conferencing, 100% does not make use of Video conferencing. This finding disagrees with Asah (2013), who said the different types of information and communication technology used in learning are video conferencing, journal clubs, and research meetings to communicate with students at distant hospitals. He also stated that institutional support is critical to sustain e-learning programs. Investments are substantial and to be successful, it should be integrated with the curriculum. As confirmed by computer literacy courses have not been part of the nursing curricular in the pst two decades. 100% of the student makes use of Internet / web based training, 74.77% of the student makes use of confrences, 100% of the student makes use of whatsApp group, 80.37% of the student makes use of ICT Educational software's / media, 78.5% of the student does not make use of DVD. This finding was supported by (UNESCO, 2013), who said Information and communication technology is often associated with high-tech devices, such as computers and software but it also encompasses more conventional technologies such as radio, television and telephone technology

Therefore, information and communication technology has positive effect on distant learning program in the National Open University Abeokuta, Nigeria. From the data analyzed, it was gathered that 100% agrees that information and communication technology has an impact on distant learning program. This finding was supported by Olugbemiro, (2016) who said there are long and short term benefits of embracing distance education in Nigeria. From the aforementioned, it is clear that there are obvious advantages to the government in using open and distance learning mode to complement the traditional methods of education in Nigeria. Amongst the many advantages which the government and the good people of Nigeria stand to benefit can be grouped into the following areas:

-• Access and equity for comprehensive national development;
-• Alleviation of capacity constraints for economics, human resources and rural development;
-• Education for all especially to reduce or totally eliminate illiteracy and poverty;- Capacity building for human resource development especially in areas of acute deficiencies such as vocational and technical education, science and technology;
-• Life-long and life-wide education in order to build a learning and knowledge-based society;
-• Access to, and capitalising on, emerging market opportunities both within the African region and globally;

-• Avenue for transforming our higher education sector to make our institutions respond to contemporary changes, developments and needs of Nigeria;

-• Providing the answer to the perennial problems of teacher education;

- Appreciating, educating the citizens about, and using information and communication technologies (ICTs) to accelerate national and community development and provide an organised entry into the global information superhighway;

-• Generating spin-off effects on other sectors of national development such as raising development in telecommunications, information technology industry, broadcasting, postal and informatics and the development of many educationrelated small-scale industries; and-

Alleviating budgetary constraints as expenditure on open and distance education has been shown in other countries to be as low as 30 per cent of the total cost of the conventional form of education beyond the take-off costs.

85.98% agrees that with the advent of ICT, the academic institution now provide a more flexible and open distant learning environment to the student. This finding was supported by Asam, 2015), who said with the advent of the information and communication technology (ICT) revolution, the academic institutions are now providing a more flexible and open learning environment to the students. Along with the print material, the audio audio/video broadcasting, audio/video teleconferencing, computer aidedinstruction, e-learning/ online-learning, computer broadcasting/web casting etc are now used for the distance and open learning education system and this helps in breaking the traditional barriers of time and place associated with the delivery of education and helps the parent institutions to implement distance education in an easier way and makes the education a life long process in real sense.

75.7% agrees that the introduction of ICT in education has result in changes of the learning environment. This finding was supported by Taylor & Hogenbirk, 2016), who said education in general has been transformed by the use of ICT. Experts are now talking about the 'School of the Future' which must grapple with the ever changing needs of Filipinos' increasingly inter-connected, globalized, information-based society. ICT is instrumental in facilitating the shift from "learning as a personal achievement to learning as a result of a global social process". 85.04% agrees that the advent of ICT in education has result in changes of the role of teachers and student. This finding was supported by Yusuf, 2005), who said worldwide, the field of education has been affected by ICTs, which have undoubtedly affected teaching, learning, and research for example, Neeru (2009) in Indian universities and colleges indicated that, transformation of higher education in the country in terms of access, equity and quality is due to the usage of ICT in education. This finding was also supported by Librero (2016), who

observed that conventional universities are now using ICTs to achieve 'blended learning' environments, which blend traditional face-to-face classroom delivery with distance delivery. This blended approach has "increased the sources of learning materials that learners must access under blended learning strategies". 71.96% agrees that the use of ICT has reshaped university cultures. This finding was supported by Westbrook (2013), who said ICT in use in ODL is also re-shaping universities' entire organizational structures. He gave an example and observed that the introduction of ICTs in education has resulted in the changes in four core areas: 1) curriculum; 2) role of teacher and students; 3) organizational structure; and 4) learning environment. Given that a growing number of transactions now take place online at a distance, appropriately automated systems for recording these transactions, tracking them, keeping and retrieving student records, and so forth, must be supported by holistic policies and procedures that take into account all academic-related activities. This finding was also supported by Azinian, (2011), who said the use of ICT is also reshaping university cultures. A school's culture is defined by its pattern of relationships and of management of resources. These patterns of relationships and methods of management are, in turn, shaped by its overarching educational philosophy, expectations from the community it serves, its moral culture, political skills of its leadership, and curriculum. 87.85% agrees that technology used to deliver instructional content influence instructional design methods used. This finding was supported by Loveless and Ellis (2014), who said the technology used to deliver instructional content has influenced instructional design methods used. For example, advise that "it is not enough to use technology to do the same types of activities; educators must also consider the new ways of thinking that the technology affords" (page number for direct quotes please). This means educators must think about pedagogy and ICT from within a systems perspective – not as discrete variables independent from one another.

5.2 LIMITATIONS TO THE STUDY

During the course of this study, the researchers faced some challenges which include financial constraints, time factor, manpower and unwillingness of some respondents to fill the questionnaire.

5.3 IMPLICATION TO NURSING

The implication of this study to nursing is

- to identify the factors hindering the effectiveness of information and communication technology in distant learning program.

- to understand the importance of distant learning program in nursing education.

- to help understand how competent the nurses who undergo distant learning program are due to the barriers identified during the study.

- to help in the utilization of information and communication technology in distant learning program

5.4 SUMMARY

This research study was carried out to identify the barriers of information and communication technology to distant learning program among nursing students in the National Open University, Abeokuta, Nigeria. The main objective of this study is to identify the barriers to distant learning program in the National Open University, Abeokuta, Nigeria.

Related literatures were reviewed in the definition, types, importance of distant learning program. Appropriate theoretical framework was used for the study. A self developed questionnaire was used as the instrument for data collection.

Systematic sampling technique was used with a sample of 107 respondents from all the levels of nursing student in the National Open University, Abeokuta, Nigeria. The data gathered was analysed and the result showed that there are some barriers to distant learning program in the National Open University, Abeokuta, Nigeria.

5.5 CONCLUSION

Based on the findings in reference to the discussion of finding, it was discovered that there are some barriers to distant learning program which include poor funding from the government, lack of power supply in school, poor ICT inclination, poor internet connectivity in school and software and licence cost. It also shows that information and communication technology has been effective in the implementation of distant learning program.

If all these barriers are attended to there will be an improvement in the distant learning program which will motivate students to be more interested in the program.

The researchers study provides support for investigating effectiveness of information and communication technology programs in that, irrespective of how the educational context may change in the future, the fundamental factors that impact learning and success have been identified.

5.6 RECOMMENDATION

Based on the findings the following recommendations are made,

- Government should provide enough information and communication technology media that will be used in disseminating course outlines to students.
- Government should ensure that there should be adequate power supply to institutions offering distant learning program to ensure effectiveness of the program.
- Institutions offering distant learning program should make their software and licence cost to be at an affordable price.
- Provision of skilled man power that will operate the available technology

5.7 SUGGESTIONS FOR FURTHER STUDY

It is suggested that there should be further studies on;

- Effectiveness of distant learning program in nursing education
- Factors affecting the full implementation of distant learning program in some higher institutions in Nigeria
- Students satisfaction about distant learning program

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