

**INFORMATION LITERACY AND LIFELONG LEARNING IN THE NATIONAL OPEN
UNIVERSITY OF NIGERIA**

BY

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DECLARATION

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I declare that INFORMATION LITERACY AND LIFELONG LEARNING IN THE NATIONAL OPEN UNIVERSITY OF NIGERIA is my own work and that all the sources that I have used or quoted have been indicated and acknowledged by means of complete references.



SIGNATURE

Edeama Oyidiya-Onyike Onwuchekwa

05/04/2017

DATE

DEDICATION

To my late husband, Engr. Onyike Ugochukwu Onwuchekwa, who left us a year after I began this programme.

Onyike, thank you for believing in me and encouraging me to forge on. You are not here to rejoice with me but I know you are glad that through it all I made you proud.

Like you will always say “We shall overcome”

We shall overcome!!!

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ABSTRACT

This study was conducted at the National Open University of Nigeria (NOUN) and it considered the information literacy and lifelong learning skills of the students in the University. The National Open University is an Open and Distance Learning (ODL) system that encompasses education for all, education for life, lifelong learning, life-wide education, adult education, mass education, media-based education, self-learning and part-time studies. The ability to recognise the need for the available information, retrieve, evaluate and use this information is a hallmark towards the direction of information literacy in any society. Developing lifelong learners is central to the mission of higher education institutions like universities, especially for distance learners.

The purpose of the study was to investigate information literacy skills amongst the students in the National Open University. This study utilized the case study method of quantitative research mixed with a qualitative strand in its data collection process. The dominant quantitative approach (questionnaire) was used to investigate the information literacy and lifelong learning skills of the students in the National Open University whilst the qualitative approach (interview and document analysis) was used to collect qualitative data needed to clarify areas that were not adequately covered in the quantitative data collection phase. This study used the questionnaire, interview and document analysis as its data collection methods.

The study was conducted in five selected study centres out of the seventy-two centres of the National Open University. This study utilized the Krejcie and Morgan (1970) formula, where the sample size of 384 was chosen because the total number of the sampled students' population was 170 830. From the quantitative perspective of the study, data analysis involved the use of simple frequency and percentage distribution, mean, median and standard deviation. The descriptive statistics were generated on all the variables in the instrument and this was accomplished with the aid of a computer software programme known as the Statistical Package for Social Sciences (SPSS) version 20. A thematic method of data analysis was used for this qualitative strand of the study.

The results of the study revealed that the information literacy library facilities available at NOUN were course materials and University websites. The study confirmed that there were no facilities in relation to information literacy development in all the schools and there was no form of

information literacy integration curriculum in the University. The study established that there were no information literacy programmes put in place to support, promote and create awareness of information literacy for lifelong learning and no methods were put in place to assess or measure the information literacy competency levels of the students in the National Open University of Nigeria. The study revealed that the link of collaboration between the academics in the school and the professional librarians was weak and not coordinated.

The documents analysed brought to light information that provided insights on information literacy development in the University. In the documents analysed, University documents were in place concerning information literacy development but these resources only stated in print, the development processes towards information. The results of the study revealed that there was still so much work to be done with regards to the implementation of policies by the University management and staff towards information literacy development. The students in the University also have a role to play in developing their information literacy skills for lifelong learning.

A recommendation that was made from this study was for the University management to integrate information literacy to become part of the university curriculum for all students. Information literacy (IL) policies should be formulated and channelled to support IL education in the University so that students will attain the necessary competencies and skills needed to access, process and assess information. Arising from the results gained from this study, it was recommended that information literacy educators should be trained in the area of information resources and ICT in order to enhance job performance. There is a serious need for the University to engage the librarians through regular training and re-training through professional development workshops. The library staff in conjunction with the Information and Communication Technology (ICT) unit of the University should create seminars and workshop for students and staff towards the improvement of information literacy instruction. For effective IL implementation in a distance learning environment, the University should work towards developing an information literacy course that is designed for asynchronous online delivery. A further empirical study on the development and implementation of information literacy skills for students in the University is also recommended.

KEYWORDS

Information Literacy, Lifelong Learning, Information Resources, Open and Distance Education, Academic Libraries, National Open University Of Nigeria, Constructivist, Adult Learning Theory, Competences, Curriculum.

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ABBREVIATIONS AND ACRONYMS

ADEA	Association for the Development of Education in Africa
ALA	American Library Association
ACRL	Association of College and Research Libraries
ANCIL	A New Curriculum for Information Literacy
CILIP	Chartered Institute of Library and Information Professionals
CMC	Computer Mediated Communication
DE	Distance Education
GST	General Studies
FtF	Face to Face
JSTOR	Journal Storage
ICT	Information and Communication Technology
IFLA	International Federation of Library Associations
IL	Information Literacy
LIS	Library and Information Science
LL	Lifelong Learning
MOOC Kit	Massive Open Online Course Kit
NCLIS	National Commission on Libraries and Information Science
NFIL	National Forum on Information Literacy
NPE	National Policy on Education
NOUN	National Open University of Nigeria
ODL	Open and Distance Learning
PCIL	Presidential Committee on the Information Literacy
SCONUL	Society of College, National and University Libraries
SCECSAL	Standing Conference of Eastern, Central and Southern African Library and Information Associations

CANDO	Council for the Advancement of Native Development Officers
CSEP	Community & Social Enterprise Partnership
UNESCO	United Nations Educational, Scientific and Cultural Organization
UNISA	University of South Africa

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CHAPTER ONE

INTRODUCTION AND BACKGROUND TO THE STUDY

1.0 Introduction

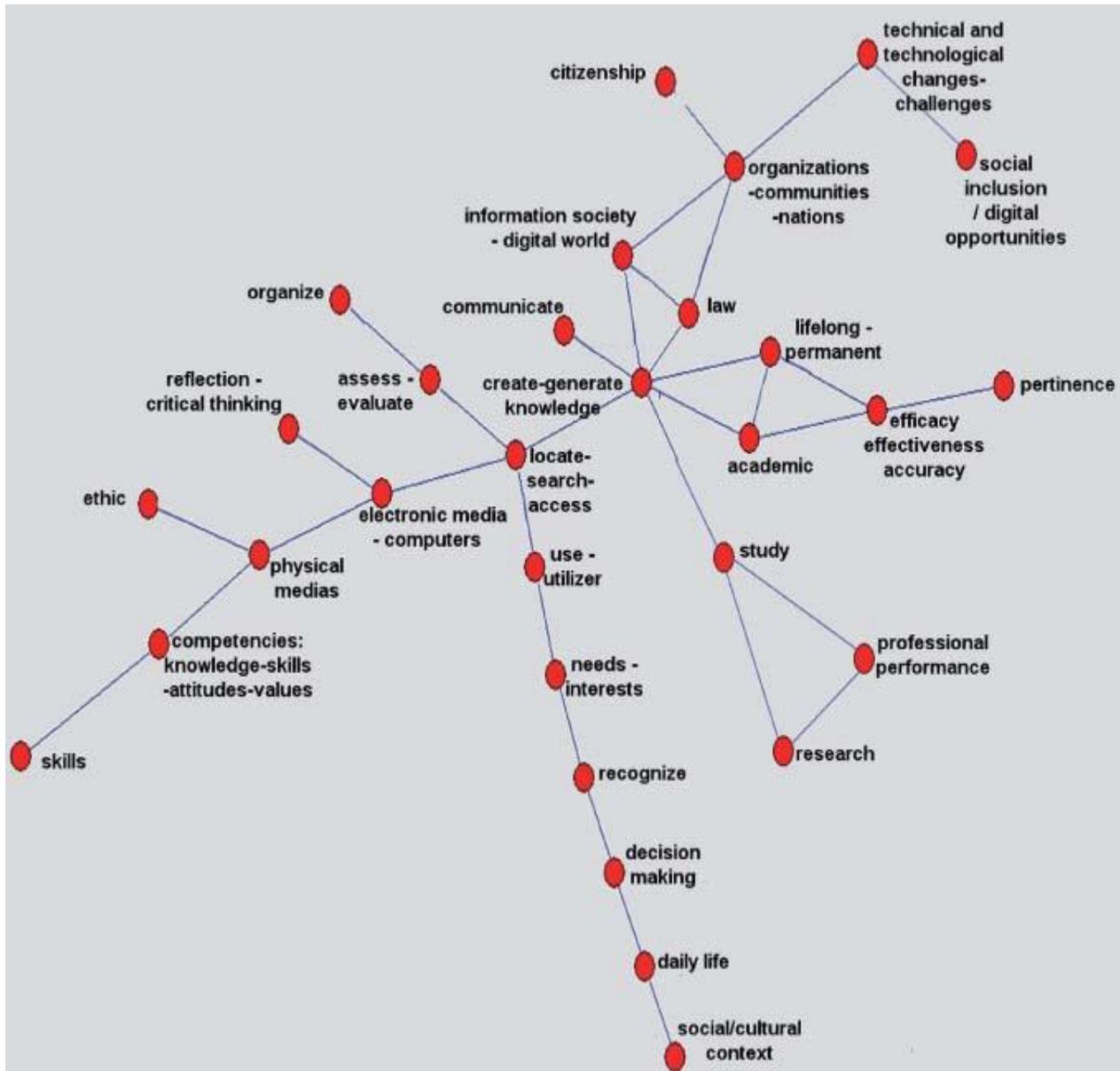
Information has always been a prime factor for the development of society and economic growth (Ogunlana; Oshinaike; Akinbode & Okunoye 2013:127). The growth of information and the dependency on it have paved the way for the information society and subsequently the knowledge society. The ability to recognize the need for the available information, retrieve, evaluate and use this information is characteristic of the direction taken by information literacy in any society. Horton (2007) posited that the United Nations Educational, Scientific and Cultural Organization (UNESCO) strongly advocated the building of knowledge societies where the power of information and communication helps people access the knowledge they need to improve their daily lives and achieve their full potential.

The problem now is not having enough information but rather too much information in different formats and not all has the necessary value. Some authors have written about the issue of information and information overload. Ifijeh (2010:3) explained that the information explosion has implications for the environment in which we live, for the work place, the academic world, and our own peace of mind. The issues of information explosion, information literacy and information retrieval are issues that should be consistently considered. Roth (1990:42) described the information environment and the pitfalls facing libraries with the explosion of information that is generated and stored, and the case of seemingly infinite reproduction of words and pictures through the unregulated sprawl of the internet, the shift from a print to an image based electronic media. All these pitfalls pose problems regarding evaluating, finding and using information, hence the necessity for the concept of information literacy.

According to Sasikala and Dhanraju (2010:3), many research papers have been published covering the basic concept of information literacy (IL) some of these authors are Breivik 1999; Owusu-Ansah 2005; Lloyd 2005; Matoush 2006; Harris & Millet 2006; Ramesha 2008 and O'Connor 2009. Some have written on the range of IL standards and models such as Donaldson 2004;

Mackey and Ho 2005; Loo & Chung 2006; Keene, Colvin & Sissons 2010). The concept of IL cannot be traced to the work of a single author. How the concept is defined, understood and applied differs at this stage in the concept's development from one nation, one culture or one linguistic group to another (Horton 2007).

Uribe-Tirado (2012:2) considered 20 proposals and pieces of work by different authors and organizations that had defined and described what information literacy is. He concluded that the definition of information literacy could be interrelated with the words and the emphasis of their definitions and descriptions by using bibliometric and information visualization techniques such as clustering, multidimensional scaling, factorial, and pathfinder networks, discourse and content analysis. Below is the graphic presentation of the concepts of information literacy that has been considered by the authors studied by Uribe-Tirado (2012:217). Figure 1.1 shows a broad description of information literacy as defined by different writers.



Uribe-Tirado (2012:217).

Figure 1.1: Interrelationship between the concepts present in analysed definitions of the term ‘information literacy’

It is from the above diagram that this definition of information literacy, according to Uribe-Tirado (2012:217), evolved and it explained that:

“The teaching-learning process is designed for an individual or group of people, under the professional leadership and guidance of an educational or library institution, using different

teaching strategies and learning environments (classroom, mixed-blended learning or “virtual). Its purpose is to achieve competencies (knowledge, skills and attitudes in computing, communications and information) that would enable, after identifying and recognizing their information needs, to locate, select, retrieve, organize, evaluate, produce, share and disseminate information in an efficient and effective way”.

This definition is all encompassing and encapsulating and blends with the purpose and focus of this study. In the Information Literacy Competency Standards for Higher Education (2000:3) information literacy is defined as:

“An intellectual framework for understanding, finding, evaluating, and using information—activities which may be accomplished in part by fluency with information technology, in part by sound investigative methods, but most important, through critical discernment and reasoning. Information literacy initiates, sustains, and extends lifelong learning through abilities which may use technologies but are ultimately independent of them”.

The above definition is similar to Garner (2005:3) whose characteristics of information literacy include that it:

- comprises the competencies to recognize information needs and to locate, evaluate, apply and create information within cultural and social contexts;
- is crucial to the competitive advantage of individuals, enterprises (especially small and medium enterprises), regions and nations;
- provides the key to effective access, use and creation of content to support economic development, education, health and human services, and all other aspects of contemporary societies, and thereby provides the vital foundation for fulfilling the goals of the millennium declaration and the world summit on the information society; and
- extends beyond current technologies to encompass learning, critical thinking and interpretative skills across professional boundaries and empowers individuals and communities.

Horton (2007) agrees that information literacy is considered as crucially important to enable people to deal with the challenge of making good use of information and communication technology. He

added that information literacy equips learners with the tools and perspectives to engage in independent and critical thinking and towards addressing their own information needs. Gunasekara and Collins (2008:2) also confirmed that information literacy is widely regarded as a key enabler of lifelong learning because it fosters skills of identifying information needs and addressing those needs in the context of independent thinking.

According to Kinengyere (2007:329), being information literate requires knowing how to clearly define a subject or area of investigation; select appropriate terminology that expresses the concept under investigation; formulate a search strategy that takes into consideration different information sources (especially e-resources) and various ways information is organized; analyse the data collected for value, relevancy, quality and suitability; and subsequently turn that data into knowledge.

Garner (2005:3) posited that lifelong learning enables individuals, communities and nations to attain their goals and to take advantage of emerging opportunities in the evolving global environment for shared benefit. It assists them and their institutions to meet technological, economic and social challenges, to redress societal disadvantages and to advance the wellbeing of all. Going beyond the community achievement to educational goals, Lau (2006:4) stated that information competencies are a key factor in lifelong learning and they are the first step in achieving educational goals. The development of such competencies should take place throughout citizens' lives, especially during their educational years, where librarians, as a part of the learning community and, as experts in information management, have or should assume the key role of facilitating information literacy.

Candy (1993:284) revealed that the attainment of information literacy is not only an educational goal, but a lifelong goal. It appears that information literacy is a goal that can be attained through a process that relies on the continuous learning of specific and evolving behaviours. It is a cluster of abilities that the individual can employ "to cope with, and to take advantage of, the unprecedented amount of information which surrounds ... us in our daily life and work".

Learning to learn is an activity of concern in all educational institutions particularly university settings which demand higher order skills of analysis, synthesis and evaluation, the ability to think critically, to construct meaning and reconstruct understanding in the light of new learning

experiences (Abubakar & Isyaku 2012:40). It has become increasingly clear that students cannot learn everything they need to know in their field of study in a few years in the universities. Information literacy equips them with the critical skills necessary to become independent lifelong learners (Baro & Fyneman 2009:660).

In developed countries, the role of libraries and librarians has changed to accommodate the new realities. According to (Ball 2005:16), Librarians in academic libraries are to act as life boats..... “Helping readers stay afloat on and navigate the ocean of information available to them”. Breivik and Gee (2006:176), adds that “there is a growing consensus that the chief function of academic libraries is not as a storage facility but as an important centre for teaching and learning”, with academic librarians now becoming “educators, inculcators of information literacy. At present, librarians are carrying most of the burden of guiding future generations to becoming lifelong learners. Librarians use the medium for teaching patrons about the resources available, what would be appropriate, how to evaluate resources, and how to use the information found. In developing the information literacy skills of students, there is a relationship between librarians and learners. Roberts and Levy (2005:221) consider that the librarian is an educator whose “role encompasses educational design, facilitation, development and innovation”.

From a different perspective, a lot of scholars have attempted to define the concept of distance education (DE) in different ways. The U.S. Congress Office of Technology Assessment defines distance learning as the “linking of a teacher and students in several geographic locations via technology that allows for interaction” (Cartwright, 1994:30). Simonson, Smaldino, Albright, and Zvacek (2000:7) explained that:

“Distance education is now often defined as institution based, formal education where the learning group is separated geographically, and where interactive telecommunications systems are used to connect learners, resources, and instructors”.

Kaufman, Watkins and Guerra (2001) viewed DE as a means of delivery of useful learning opportunities at a convenient time and place. A slightly newer definition is offered by Jegede (2003) who views DE as the education that is provided by a mode other than the conventional face-to-face method, but whose goals are similar to and just as noble as those of on-campus, full

time face-to-face education. As a distant learning institution, the National Open University shared the basic attributes in the definitions discussed above.

In their article the Association for the Development of Education in Africa (ADEA) Working Group on Distance Education and Open Learning (2002:14) identified the characteristics of DE as including:

- Institutional accreditation (where an institution or agency certifies the learning);
- Use of a variety of media for instructional delivery;
- Provision of two-way communication to ensure tutor-learner and learner-learner interaction; and
- The option of face-to-face meetings for tutorials for learner to learner interaction, laboratory or practice sessions or library study.

According to Tamilchelvi and Senthilnathan (2013:29) Information literacy and lifelong learning have a strategic, mutually reinforcing relationship with each other that is critical to the success of every individual, organisation, institution, and nation-state in the global information society. These two modern concepts should ideally be harnessed to work symbiotically and synergistically with one another if people and institutions are to successfully survive and compete in the 21st century and beyond (Lau 2006:12). Abubakar and Isyaku (2012:127) posits that information services are generated using new tools and techniques to direct the users to the right information. Technological tools for disseminating information have progressed from conventional books and journals to electronic journals and online databases, making it possible to explore the vast information around the world. Information literacy is important to higher education because it is a part of and a contributor to lifelong learning (Dangani 2009:25).

Jurkowski (2005:24) is of the opinion that academic libraries tend to differ from other types of libraries in their approach to serving patrons in that they endeavour to teach students, faculty, and staff how to find information instead of simply providing it for them. By teaching students to be self-sufficient library users, students will be able to become lifelong learners and can function independently in libraries and in life in general. According to Abubakar and Isyaku (2012:40), developing lifelong learners is central to the mission of educational institutions, and it should be

increasingly reflected in descriptions of graduate qualities, attributes or capabilities in and outside the academic environment.

1.2. Contextual Setting

This section describes information literacy and lifelong learning in Nigeria and the National Open University in particular, and offers background information to the National Open University Library where the study was conducted.

1.2.1 Information Literacy and Lifelong Learning in Nigeria

Developing lifelong learners is central to the mission of higher education institutions like universities. This can be achieved by ensuring that individuals have the intellectual abilities of reasoning and critical thinking, and by helping them to construct a framework for learning how to learn. Colleges and universities must provide the foundation for the continued growth of students throughout their careers, as well as in their roles as informed citizens and members of communities (ALA 1989). “Lifelong learning”, according to Royce (1999:149),

“Aims to give students the skills to go on learning throughout life and also a positive attitude towards learning which accepts and welcomes change and new learning”.

According to Idiodi (2005:227) information literacy training in Nigerian Universities takes the form of library user education, and it echoes the traditional practices elsewhere. Idiodi further observes that these often include library orientation, library instruction, courses, one-on-one instruction (via reference services) and the use of guides and manuals. Library orientation is usually mandatory in Nigerian universities and takes place during the general orientation week for new students. The aim, states Idiodi, is to familiarize students with library facilities and services. During the orientation, students are taken round the various sections of the library, given brochures and handbooks highlighting resources and provided given introductory lectures on library use, and, where possible, given demonstrations on how to locate and retrieve materials.

Dangani (2009:25) stated that information literacy education in the Nigerian library schools is necessary for both staff and students. Abubakar and Isyaku (2012:40) added that information literacy education in the Nigerian Universities if properly handled would serve as a catalyst for determining productivity output of the Nigerian universities since the faculties and librarians will

be making a big impact on the academic reasoning and competencies of their students with a motivational zeal in them to actualise their talent in problem-solving.

Baro and Fyneman (2009:667) described in their findings that undergraduate students in Niger Delta University in Nigeria were expected to make maximum use of the university library as one their major sources of information. However, the sad fact is that, for whatever reasons, undergraduate students in the university do not use most of the library information resources available to them due to ignorance and inability to locate the resources available to them.

Abubakar and Isyaku (2012:40) opined that it behoves the faculty members and librarians in the Nigerian universities to address the issues of non-productivity of university students to achieve this desired outcome. Information literacy education should be emphasised within and outside the library field in a collaborative and multi-disciplinary approach. Umar (2012:170) stated that the Nigerian universities' lecturers and librarians should be organising literacy programmes aimed at building knowledge and capacity of both undergraduate and postgraduate students on a regular basis. Dangani (2009:27) also suggested that information literacy should be incorporated into the curriculum of Nigerian library schools and it should also be made one of the desired learning outcomes required for graduation.

1.2.2 History and Development of the National Open University

According to the National Open University Blueprint on Open and Distance Learning Programmes (2002:9), since the early 1960s there has been commitment to remedy perceived deficiencies in the colonial education strategy, which targeted only a few privileged people in selected regions of the country and was ill-tailored to the needs of a newly independent Nigeria. In response to the above, there has been an increasing commitment to the strengthening of the education delivery system across the country for alternative models to the conventional system which was rather restrictive and limited both in scope and reach.

The idea of an Open University system for Nigeria as a separate and distinct institution to be organised nationwide was appropriately reflected in the 1977 National Policy on Education (NPE) which stated emphatically and unambiguously that "Maximum efforts will be made to enable those who can benefit from higher education to be given access to it". The policy explicitly referred to what is now known as "Open and Distance Learning" (ODL), a system that encompasses education

for all, education for life, life-long learning, life-wide education, adult education, mass education, media-based education, self-learning, part-time studies, etcetera. It is this policy that forms the bedrock of the National Open University of Nigeria (NOUN Student Handbook 2006:14).

Osam and Ekpo (2009:348) reported that the acknowledgement of this policy led to the establishment of the National Open University by an Act of the National Assembly in 1983. However, it was closed a few months later by the Federal Military Government that overthrew the civilian government of Alhaji Shehu Shagari. Many years after the closure, the compelling reasons that informed the earlier establishment of the university were still confronting the country.

At the dawn of a democratic government under Chief Olusegun Obasanjo, there was a rethink by Nigeria to deploy DE in a more comprehensive manner to tackle the perennial problem of admission into higher education. President Obasanjo on assumption of office in May 1999 declared his government's commitment to education. To actualise this commitment, several workshops and seminars were organised in various areas of education, (Okonkwo 2012:60). The University was established by an Act dated 22nd July 1983.

The National Open University of Nigeria at its inception started with 19 study centres and about 10 620 students were admitted, but 7 515 registered as pioneer students (Okonkwo 2012:63). Presently, NOUN has 70 study centres (NOUN Newsletter 2015). These are listed below:

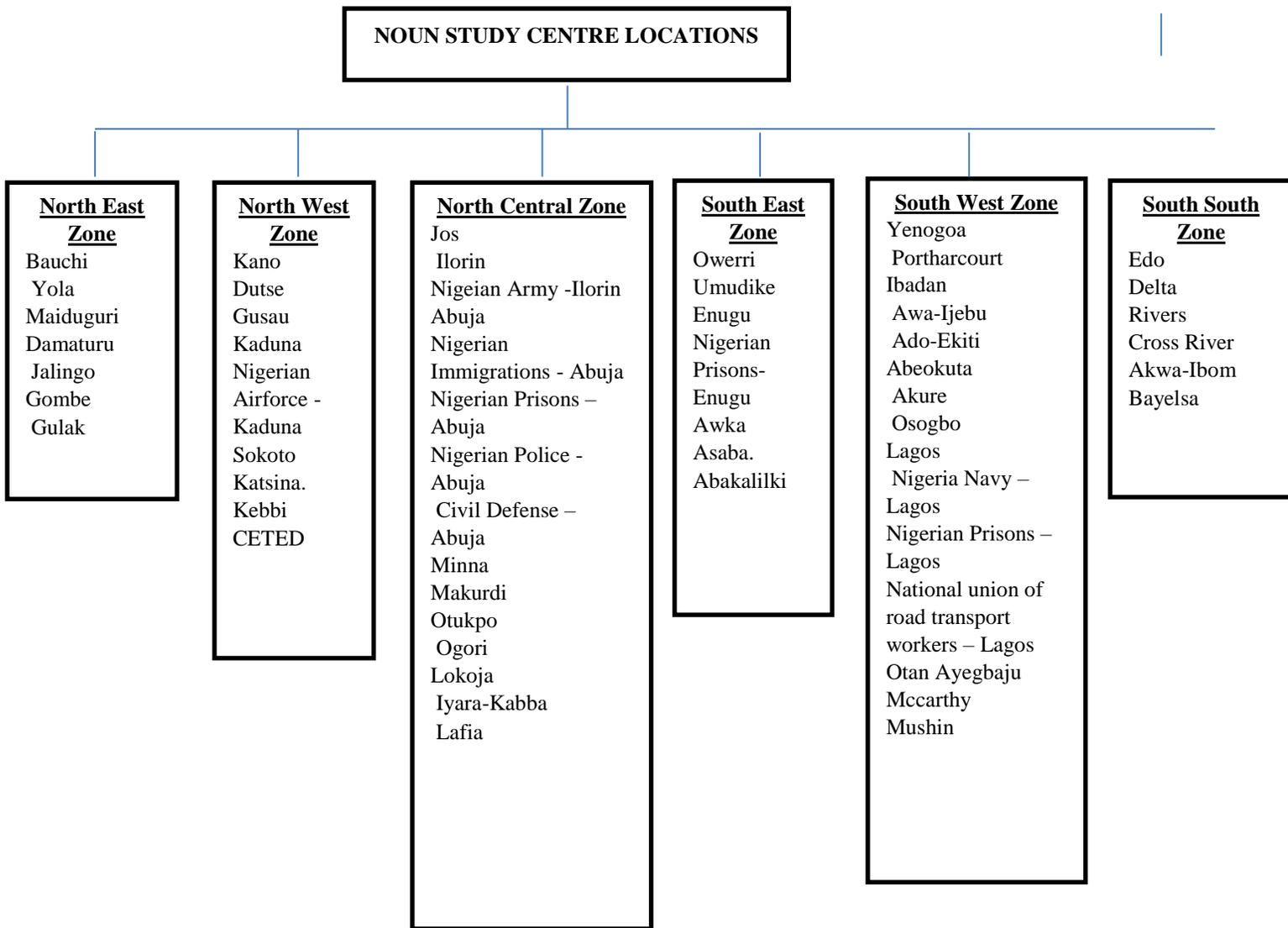


Figure 1.2: Geographical Distribution of NOUN Study Centres

The above diagram shows that the University has distributed these 70 study centres into five zones. Among these study centres are special centres and community study centres. Special study centres are: Nigerian Air force – Kaduna, Nigerian Army – Abuja, Nigerian Immigrations – Abuja, Nigerian Prisons – Abuja, Nigeria Police – Abuja, Nigerian Civil Defence Corps – Abuja, Nigerian Prisons – Enugu, Nigerian Navy – Lagos, Nigerian Prisons – Lagos, and National Union of Road Transport workers – Lagos, Nigeria Prisons- Port Harcourt, Nigerian Navy, Nigeria Prisons

Kirikiri, Nigerian Public Service Institute, Federal Road Safety Corps- Abuja, National Assembly- Abuja.

The Community Study centres are: Gulak, Community study centre – Ogori, Community study centre – Iyara, and Community study centre – Awa-Ijebu, Community Study centre- Emevor, Community Study Centre-Offa, community Study Centre-Awgu, Community Study Centre-Bogoro, Community Study Centre-Fugar, and Community Study Centre-Izare.

In all, there exist 47 study centres, 14 special study centres and nine community study centres (NOUN 2014/2015 Annual Report). The drive behind the establishment NOUN was to make both formal and non-formal education accessible to the ever increasing population of Nigerians seeking to be educated.

1.2.3 National Open University Library

Historically, information literacy has its roots in the concepts of library instruction and bibliographic instruction. Information literacy is considered essential "to the pursuit of lifelong learning, and central to achieving both personal and economic development" (Bruce 2002:1). The National Open University of Nigeria is an open and distance learning environment and has a bit of peculiarity in the provision of information and delivery of learning outcomes. Unlike the conventional universities that organise a face to face mode of information delivery, NOUN delivers its course content through electronic and online medium.

After the establishment of the National Open University, the need for a library became of paramount importance and in 2007 the National Open University Library was established to support the learning process of the University. Presently, the University library has 53 professional librarians and 20 para-professional library staff at the headquarters and different study centres. The National Open library offers access to countless learning opportunities through its extensive collections and wide ranging resources. The university library has over 15,000 volumes of print resources at its headquarters and also at the study centre libraries. Its collection of books and other materials provides essential background knowledge to most of the subjects taught in the formal lectures. This includes books and journals on the Arts & Social Sciences, Sciences, Law, Education, Business, and Management. The NOUN library subscribes to several databases with the availability of electronic books, journals and periodicals (Onwuchekwa 2012:2).

Baro and Fyneman (2009:662) posited that information gathering could be a challenging and an arduous task to the undergraduate students in tertiary institutions. Beside the problem of unavailable facilities is the way students organise their own learning, how they source for academic information needed for them to excel. The higher the students go on the academic ladder, the more academic information they require to tackle the various challenges. At a higher stage, students tend to be given opportunities to organise their own learning, and more assignments, seminars, and projects require them to search for information (Ajiboye & Tella 2007:49).

The object of IL instruction is that the instruction should develop the university students' innovative thinking and the ability to evaluate research (Xiaoling Li et al 2009). For example, developing a guide for students to use or for resource evaluation, presenting a class session, creating a course web site giving students a guided tour for searching the web, developing an assignment where students work on a search strategy appropriate to a problem statement, assigning students in presentation of their literature reviews, developing online tutorials or integrating information literacy into the curriculum. Through the creation of curriculum-integrated programmes, librarians should actively contribute to the students' learning processes in their search to enhance or develop the skills, knowledge and values needed to become lifelong learners (Lau 2006:4).

NOUN University Library's Strategic Plan (2012:65) has as one of its strategic goals to "...develop and promote information and digital literacy". Also in its plan framework it states that the library will "establish a comprehensive user education programme for its users and also develop a strong team of professional librarians". The University in compliance with the directives of the National Universities Commission has integrated in its General Studies (GST) course, an aspect of library instruction known as "Use of the Library". This course introduces the student to learning skills and how to use the Library. From this study's point of view, this is just a small aspect of information literacy.

Also, in some study centres in the University, the University conducts an orientation exercise for its first year students as part of the freshers' programme and during this programme the students are taken through a lecture presentation on the use of the Library. It is worthy to note that the two methods discussed above do not adequately enable students to become information literate and acquire skills for lifelong learning.

1.3 Statement of the Problem

According to the SCECSAL Pre-Conference Seminar Report (2010:5), the continuous growth of high-quality research materials available online has made the importance of information literacy apparent. Thus, a growing number of institutions in Africa such as South Africa, Ghana, Tanzania and even Nigeria have been exploring ways to improve information literacy among their students, lecturers and researchers. The National Open University of Nigeria is not an exception.

Information literacy is thus required because of the ongoing proliferation of information resources and the variable methods of access. Increasingly, information comes unfiltered. The uncertain quality and expanding quantity of information also pose large challenges for society (Bundy 2004a:3). There is, therefore, the need for a complementary cluster of abilities necessary to use information effectively as a mere abundance of information does not in itself create a more informed citizenry (Madu & Dike 2012:179).

According to the Middle States Commission on Higher Education (2003:4), information literacy is much more than technological competence or on-line research. It encourages critical thinking and reflection in the context of the increasingly extensive amounts of information now available through a wide range of technologies. Adler (1999:4) pointed out the effect of the internet and its “interactive, dynamic, and decentralized” nature creates an additional dilemma because the internet environment “makes less distinction than older media between consumers and producers of content.” Therefore, the evaluative skills of information literate consumers become much more important as they participate more effectively and actively in society. The importance of IL is also to focus on peer-reviewed sources and databases for academic programmes.

The digital world is increasingly influencing the way academics and students search for information. A particular challenge for today’s educators and students in Nigerian tertiary institutions is to understand the relationships between types of information resources, and how to evaluate the appropriateness and reliability of these resources and how to make intelligent choices among them (Chipeta 2010:25). It has also been observed by the researcher that most of the students who use the university library regularly lack necessary skills to use the information available in the library and this hampers access to the information and makes their information retrieval process dreary and uninteresting.

According to Lin (2011:412) many researchers contend that first-year students constitute a special category. Accordingly, not only are first year students likely to need more introduction and guidance to strengthen their consciousness of the importance of the recognition of library resources and capability in using them, but they must often also be persuaded to adopt a different philosophy for the acquisition and usage of information that amounts to a complete culture change. Similarly, the assessment of information literacy skills and competences among students in the National Open University of Nigeria has not been emphasised in the National Open University of Nigeria and other institutions of higher learning. It is against this background that the researcher has attempted to investigate the information literacy among students in the National Open University of Nigeria.

1.4 Purpose, Objectives of the Study and Research Questions

This study was guided by the purpose, objectives and research questions stated below.

1.4.1 Purpose of the Study

According to Marshall and Rossman (2006:3), the researcher should explain his reason for conducting the study because the purpose of the research serves to inform the reader about what the researcher is planning to achieve with the study in question. According to UNISA (2012:31) the aim of a study is the general goal or purpose for the study, which means what the research proposes to achieve. The purpose of this study was to investigate the information literacy skills amongst students in the National Open University in the five study centres in the country.

1.4.2 Objectives of the Study

Objectives are measurable outcomes of the research and hence must be tangible, specific, concrete, and achievable in a specified time period (UNISA 2012:31). The study sought to achieve the following objectives which were formulated in line with the above-mentioned purpose of the study:

- To identify the types and forms of information literacy programmes being offered at the National Open University of Nigeria.
- To examine the resources and facilities of the university library in relation to information literacy skills development.
- To assess the level of awareness of the students of the NOUN on the information literacy programmes in the University.

- To determine the competency levels of information literacy among the students of the National Open University of Nigeria.
- To determine the level of information literacy development in the schools and amongst the library professionals in the University.
- To proffer strategies that should be adopted for the implementation of information literacy and lifelong learning.

1.4.3 Research Questions

Creswell (2003:80) indicated that a research problem is the issue that exists in the literature, in theory or in practice and leads to a need for the study. According to Race (2010:3) choosing the right research question involves a number of decisions that will shape both the research project and process. The “right” question has to involve several issues: an adequate knowledge of the area being considered for research, constructive support from a supervisor, and the time a researcher has to carry out the research.

Doorewaard (2010:3) explained that two requirements must be met in order to formulate a proper set of research questions. First, research questions must have a steering function because they are supposed to navigate the researcher along the complex journey of accomplishing the case study project. Second, the set of research questions needs to be composed in the most efficient way. The research study was guided by the following research questions:

- What are the types and forms of library instruction being practiced in the National Open University of Nigeria?
- What are the information literacy resources available at the NOUN library in relation to information literacy skills development?
- Are NOUN students aware of the information literacy programmes available to them in the University?
- What is the competency level of information literacy among the students of the National Open University of Nigeria?
- What is the level of information literacy development in the schools in the University?
- What are the possible strategies that should be adopted for the implementation of information literacy and lifelong learning?

Table 1.1: Illustration of Relationships between Research Objectives, Research Questions and Possible Sources of Data

OBJECTIVES	RESEARCH QUESTIONS	POPULATION	SOURCES OF DATA
To identify the types and forms of library instruction being practiced in the National Open University of Nigeria	What are the types and forms of library instruction (Information Literacy programme) being practiced in the National Open University of Nigeria?	The students, the Deans of the different schools and the professional librarians	Questionnaire Interview NOUN library docs NOUN Students Handbook
To examine the resources and facilities of the University library in relation to information literacy skills development	What information literacy resources are available at the NOUN library in relation to information literacy skills development?	The University librarian and the professional librarians in the library	Interview Questionnaire
To assess the level of awareness of the students of the NOUN on the information literacy programmes in the University.	Are NOUN students aware of the information literacy programmes available to them in the University?	Sample population of students	Questionnaire

To determine the competency level of information literacy among the students of the National Open University of Nigeria	What is the competency level of information literacy among the students of the National Open University of Nigeria?	Sample population of students	1) Questionnaire
To determine the level of information literacy development in the schools and amongst the library professionals in the University.	What is the level of information literacy development in the schools in the University and amongst the library professionals in the University?	The Deans of the different schools of the University and the professional librarians in the University.	Interview Questionnaire
To proffer strategies that should be adopted for the implementation of information literacy and lifelong learning.	What are the possible ways to develop the IL skills amongst newly admitted students in NOUN?	The Deans of the different Schools of the University and the professional librarians in the University.	Interview Questionnaire

1.5 Significance of the Study

According to Creswell (2003:149), the significance of the study “elaborates on the importance and implications of a study for researchers, practitioners and policy makers”. He argued that the significance of the study should centre on how the study adds to scholarly research and literature in the field, and how it can help improve practice and why it can improve policy. Woodwall (2012) further explained that the significance of a study has to do with establishing why the research is

important and what contribution of new knowledge the research would offer to the field of study. Hence the significance of study provides the context for understanding the importance of the research.

Considering the peculiarity of the National Open University of Nigeria (distance learning environment) in Nigeria, there is great need for this research as it will introduce recommendations that, if implemented, will take learning beyond the walls of the University. These students need IL skills to recognize their information needs, locate and access these information resources and evaluate them for their academic needs.

The study is important to the university under study since it highlights issues on information literacy skills among its students. It will form the basis upon which the university library can engage itself in information literacy programmes to help new students. Also, the study would be of great significance to the university management because the information literacy model that was designed from this research may serve as a prototype for the design of the proposed NOUN information literacy programme. It will serve as an eye-opener and help them to point out the strengths and weaknesses about undergraduate students regarding information literacy skills. It will also form a basis for further research in the area of information literacy in open and distance learning in Nigeria and in Africa in general. To the researcher, the study will be an important work in her career development and a pointer to her interest in the field of information literacy and lifelong learning.

Therefore, conducting this study is justified and significant in several ways in terms of contributing to the growing scholarly literature that goes beyond information literacy alone and extends to information literacy in an open and distance learning environment. To other distance learning university libraries, the research will provide an important reference point for launching their own IL programmes or conducting IL and competency assessment of their students at different levels.

1.6 Literature Review

The review of the literature covered study materials, reports, study guides and related studies. The researcher organised and reviewed literature in line with the objectives of the study. The literature review focused on the following aspects: literature available on the concept of information literacy, information literacy in higher education, literacy needs of undergraduate students, information

literacy curriculum integration and challenges of information literacy instruction in Nigeria. These issues were examined to provide the conceptual basis for the study.

1.7 Research Methodology

According to Silverman (2013:113), a methodology refers to the choices we make about cases to study, methods of data gathering, and forms of data analysis in planning and executing a research study. Silverman posited that a methodology defines how one will go about studying any phenomenon. Like theories, methodology cannot be true or false; it can only be more or less useful.

In this study, a quantitative approach was the dominant data collection strategy with a small component of the overall study being drawn from the qualitative paradigm. The dominant quantitative approach was used in the study to test the information literacy and lifelong learning skills of the students in the National Open University whilst the qualitative approach was used to collect qualitative data needed to clarify areas that were not adequately covered in the quantitative data collection phase.

1.8 Scope and Limitations of the Study

Marshall and Rossman (2006:42) are of the opinion that the concept of ‘limitations of the study’ was introduced with the intention to remind the reader about the study, the study boundaries and the contribution of the study to the understanding of the issue being researched. The study is limited to the students, librarians and deans of the schools in the National Open University of Nigeria in the five study centres that were chosen based on the population of the students.

The students in the Special Study Centres and Community Centres were exempted from the study because the study centres are not considered regular centres of the University. Very often, they are centres set up by parent institutions of various arms of government. Examples of Special Study centres are the Prisons Special study centre, Nigerian Civil Defence Corps and the National Assembly Study centre. Community centres are Gulak, Community study centre – Ogori, Community study centre – Iyara, and Community study centre and Awa-Ijebu, Community Study centre.

The only anticipated constraint was during the data collection period. Data collection was affected by the busy schedule of most of the respondents were working and at the same time studying, hence it was not very easy to see them. However, permission was granted to the researcher and the research assistants to have access to the student respondents during their contact hours.

1.9 Originality of the Study

Guetzkow and Mallard (2004:190) defined originality as the production of new findings and new theories. The authors also affirmed that, in the context of fellowship competitions, peer reviewers in the social sciences and humanities define originality much more broadly: as using a new approach, theory, method, or data; studying a new topic; doing research in an understudied area; or producing new findings. Authors like Blaxter, Hughes and Tight (1998:13) have stated in their work that the element of originality in one's own research is, realistically, likely to be small; highly original research is very unusual.

Some criteria which may merit 'originality' are listed by the Academic Skills Unit (2010:3) and are suitable for this study. These are listed as:

- Presenting a major piece of new information in writing for the first time
- Extending, qualifying or elaborating on an existing piece of work
- Undertaking an original piece of work designed by someone else
- Developing a new product or improving an existing one
- Reinterpreting an existing theory, maybe in a different context
- Carrying out empirical work that has not been done before
- Using a different methodological approach to address a problem
- Synthesizing information in a new or different way
- Providing a new interpretation using existing known information
- Repeating research in other contexts, for example, a different country
- Applying existing ideas to new areas of study
- Taking a particular technique and applying it in a new area
- Developing a new research tool or technique
- Taking a different approach, for example a cross disciplinary perspective

- Adding to knowledge in a way that has not previously been done before
- Conducting a study on a previously un-researched area or topic
- Producing a critical analysis of something not previously examined

This study is a new in-depth study in that it was concerned with a relatively under-researched area in information literacy and distance learning in the National Open University of Nigeria. This study used a different methodological approach to address a problem of lack of information literacy skills amongst students, and it resulted in recommendations for a new model or programme for the students to promote lifelong learning.

Since very little empirical study has been carried out on information literacy and lifelong learning in the National Open University. The originality of the study would also be revealed in the research outcomes which invariably and significantly contributed to the existing knowledge in information literacy and lifelong learning from previous studies.

It is strongly assured that the contents of this work are original and cannot be said to be the duplication of previous efforts or research in the past. To the best of my knowledge it contains no materials previously published or written by another person, or substantial proportions of material which have been accepted for the award of any other degree or diploma at the University of South Africa (UNISA) or any other educational institution, except where due acknowledgement is made in the thesis.

1.10 Ethical Considerations

According to Govil (2013:18) since educational research has the fundamental purpose of improving the lives of individuals, communities and societies, ethical consideration must lie at the core of educational research. The four important areas where the educational researcher has responsibility are:

- Participants
- Sponsors/administrators/teachers/or beneficiaries
- Area of knowledge
- Fellow researchers

According to Onwuegbuzie and Collins (2007:306), an ethical design is one that “adheres to the ethical guidelines stipulated by organizations such as institutional research boards in order for the integrity of the research to be maintained throughout and that all sample members are protected”. Carlin (2003:4) observed that ethical design focuses on: ensuring individuals’ anonymity, maintaining confidentiality, gaining access to settings for research purposes and informed consent, protecting individuals from harm caused by participating in and presenting the research, and examining the relation between the researcher and the researched.

The UNISA (2012:16) ethical document emphasises that researchers should maintain privacy, anonymity, and confidentiality of information in collecting, creating, storing, accessing, transferring and disposing of personal records and data under their control, whether these are written, automated or recorded in any other medium, including computer equipment, graphs, drawings, photographs, films or other devices in which visual images are embodied.

Ani (2013:132) explained that in social science research human beings commonly referred to as participants are usually subjects of study. This raised a fundamental ethical issue on how a researcher can go about the conduct of his/her research without causing any harm to the participants. According to UNISA (2012:11), participants should be seen as indispensable and worthy partners in research. Researchers should respect and protect the rights and interests of participants at every stage and level of research. Nachmias and Nachmias (2005:81) indicated that a signed consent from research participants should be obtained prior to the research project. This is affirmed by Taylor (2000:7) that, “subjects (respondents) must be given a choice to determine whether to participate in the study” or not.

In the bid to adhere to ethical issues for the above study, the researcher sought permission from the respondents to be involved in the research. The research project gave respondents and participants freedom of choice to participate or not to participate and the right to privacy to be upheld. In case of confidentiality, the researcher did not include any section for the respondent to sign or fill in their names. The researcher also sought permission to carry out the research from the university management and the university library where the researcher works.

1.11 Definition of Key Terms

In conducting research it is ideal for researchers to be precise in how they use language and terms. The need to ground thoughts in authoritative definitions constitutes good research science. The following terms were considered key terms for this study.

Information Literacy

Information literacy is usually defined as the combination of traditional literacy concepts and fundamental computer-literacy skills. When someone talks about IL, the computer skills component is usually assumed, or a secondary thought after the skills of assessing and using information (Kimani 2014:35).

Information Literacy Resources

According to Horton (2015:25) the list of IL resources by UNSECO Standard

“contains institutional website URLs (for Information Literacy standards and guidelines, teaching methods, research underway, model lesson plan outlines, and conference papers, often by university faculty and professional societies and government agencies) as well as Information Literacy books, journals and other kinds of publications and documents, including their ISBNs and ISSN citations and links (journal articles, conference talks and presentations appearing in conference reports and on websites, professional society and association policy statements)”

Library Resources

Library resources are materials, both print and non-print and audio-visuals that are available in libraries for academic, research and recreational purposes. (Onwuchekwa 2012:1)

Lifelong Learning

The European Lifelong Learning Initiative defined lifelong learning as “ a continuously supportive process which stimulates and empowers individuals to acquire all the knowledge, values ,skills and understanding they will require throughout their lifetime and to apply them with confidence, creativity and enjoyment, in all roles circumstances, and environment” (Watson 2003:3).

Lifelong learning can also be defined as:

“... all purposeful learning activity undertaken on an ongoing basis with the aim of improving knowledge, skills and competence. It contains various forms of education and training, formal, non-formal and informal, e.g. the traditional school system from primary to tertiary level, free adult education, informal search and training, individually, in a group setting or within the framework of social movements” (Hägström 2004:2).

In a more recent and precise definition, the Glossary of Certified Aboriginal Economic Process Terms (2011:64) defined lifelong learning as, “An ongoing learning in formal, non-formal and informal ways, cradle to grave learning and knowledge building process.”

Collaboration

Collaboration is a mutually beneficial and well-defined relationship entered into by two or more organisations to achieve common goals. The relationship includes a commitment to mutual relationships and goals; a jointly developed structure and shared responsibility; mutual authority and accountability for success; and sharing resources and rewards (Mattessich, Murray-Close & Monsey 2001:4).

Distance Education

Distance education is teaching and planned learning in which teaching normally occurs in a different place from learning, requiring communication through technologies as well as special institutional organisation (Moore & Kearsley 2012:2).

The commonalities found in the definitions of distance education is that some form of instruction occurs between two parties (a learner and an instructor), it is held at different times and/or places, and uses varying forms of instructional materials (Moore, Dickson-Deane & Galyen 2011:130).

Open and Distance Learning

Open distance learning is a multi-dimensional concept aimed at bridging the time, geographical, economic, social, and educational and communication distance between student and institution, student and academics, student and courseware and student and peers. Open distance learning focuses on removing barriers to access learning, flexibility of learning provision, student centeredness, supporting students and constructing learning programmes with the expectation that students can succeed (Unisa 2008:2). Moon, Leach and Stevens (2005:218) defined ODL as the open learning approaches which, when combined with distance education methodologies, are often referred to collectively as open and distance learning.

1.12 Dissemination of the Findings

It is envisaged that the findings from this research will be published in a scholarly journal in the field of library and information science. Also, the findings of the study are expected to be presented at conferences, seminars and workshops both local and international.

Copies of the dissertation will be submitted to the Department of Information Science, University of South Africa, for departmental use and another copy of the dissertation will be deposited at the National Open University headquarters library as an academic progress report and for use by researchers and other library users interested in this area of study.

The results may be published in peer-reviewed journals such as *Library Philosophy and Practice*, *International Journal of Library Science* and other professional journals. Finally, the author will give written consent to library and information centres that may request to keep a copy of the unpublished dissertation as part of their collection.

1.13 Organisation of the Dissertation

The study is organised into six chapters, namely: Introduction, literature review, research methodology, data analysis and presentation, discussion and summary, conclusions and recommendations.

Chapter One: Introduction

This chapter includes the introduction which comprises of the statement of the problem, the background to the problem, purpose of the study, objectives, and research questions, significance of the study and scope and limitations of the study. The chapter outlines both the setting of the topic ‘information literacy’ and lifelong learning and also the extent of information literacy skills in relation to the newly admitted undergraduate students. The originality of the study, the ethical considerations, the methodology and the dissemination of findings are addressed in this chapter.

Chapter Two: Literature review

The chapter consists of reviewed literature related to the problem under study. There is a review of existing literature which helps clarify the nature of the problem, while highlighting gaps. It explains how the present research brings into the open the gaps or problems through an examination of literature by other researchers.

Chapter Three: Research methodology

Chapter three explains the research plans and methods. The research methodology comprises research design, study area, target population, sampling methods and procedures, sampling method, sample frame, sample size, data collection methods and procedures, data collection procedure, data collection instruments, and pretesting of instruments.

Chapter Four: Data analysis, interpretation and presentation of the findings

This is an important component of the dissertation. The research results contained in chapter four are based on the analysis of the data generated from the research questions. Here data analysed is interpreted and presented in various formats, tables and figures.

Chapter Five: Discussion of the findings

The findings from the study are discussed extensively in this chapter. Chapter five was devoted to interpretation of the data and findings from the surveys. The interpretations of the research findings are in accordance with the specific objectives and theoretical framework as discussed in chapters one and three.

Chapter Six: Summary, conclusions and recommendations

Chapter six is the final chapter of the thesis and consists mainly of a summary of the research findings, conclusions and recommendations arising from the research, as well as highlighting implications for further research.

1.14 Referencing Conventions used in the Study

According to Mavodza (2010:26) in doing research the acknowledgement of scholarly works and ideas by other people is achieved by referencing and citing. At the beginning of the research, it is important to find out which referencing style or citation format is used by or is acceptable to your organisation.

Plagiarism is obviously a serious ethical issue to which the researcher gave serious attention. All works used in the study were dully acknowledged as spelt out by the UNISA ethical guidelines/policies on research (UNISA 2007).

This study adopted the Harvard referencing style as recommended by the Department of Information Science (UNISA 2010:49). The facts, ideas or arguments of other authors cited in the study were identified and acknowledged appropriately.

1.15 Summary

Chapter one provided the background and sets the scene of the whole study. The chapter discussed the rationale of the study, defined the key working concepts in the thesis and other issues relating to information literacy.

The introduction established the concern leading to the research problem. The peculiar issues concerning information literacy and distance learning were highlighted alongside the accompanying challenges.

The aim and objectives of the study, research questions, methodology, and significance of the study were presented. The scope and delimitation, ethical issues, and an outline of the thesis have been given. Other sections covered the purpose of the study, research objectives, and research questions; justification of the study; scope, limitations and significance of the study; literature review approaches; organisation of the dissertation and dissemination of the research findings. The chapter ended with an outline of the thesis and the referencing style adopted. The second chapter, chapter two, consist of reviewed literature related to the problem under study.

CHAPTER TWO

LITERATURE REVIEW: INFORMATION LITERACY AND LIFELONG LEARNING IN OPEN AND DISTANCE EDUCATION

2.0 Introduction

This chapter presents the literature review for the study. The need for a literature review in a doctoral study cannot be over emphasised. According to Aveyard (2014:4), a literature review seeks to summarise the literature that is available on any topic. The researcher makes sense of a body of research and presents an analysis of the available literature so the reader does not have to access each individual research report included in the review. To the researcher, the literature review makes a researcher familiar with previous work or research in his/her discipline, in addition to the need for the researcher to gain knowledge on how to find, analyse, evaluate and integrate information from existing research (Gastel 2012).

Bell (2010:112) emphasised that literature reviews should be succinct and give a picture of the state of knowledge and of major questions in a topic area. This section is devoted to a review of the relevant literature on information literacy and lifelong learning, information resources in academic libraries, information literate students, the role of librarians in information literacy development and the information literacy curriculum. A literature review has several benefits such as it helps the researcher to find out what has been done in the area or subject related to the research problem that is being investigated. It also helps to draw attention to previous studies conducted in the same field and research topic (Bryman 2008:95 & Neuman 2006:111). The review sought to establish what was being done and what had not been accomplished in this field. In this study, the review of literature is organised in themes related to information literacy and other related topics.

2.1. Purpose of a Literature Review

According to Gall, Gall and Borg (2007:98) the purpose of the literature review is to inform the reader about “what already is known, and what is yet to be known, about problems, or questions that you plan to investigate”. Ridley (2012:3) observed that the literature review serves as the driving force and jumping off point for your own research investigation. The literature review is where connection is made between the source texts that you draw on. Ani (2013:38) added that a

literature review is helpful in assisting the researcher to know different approaches that he/she can adopt in his/her own research.

A literature review primarily sets the foundation for a new research/study, guides the researcher through the research process, and is also relevant in the choice of the theoretical framework or the conceptual map for the study.

2.2 Conceptual Map

According to Novak and Cañas (2006:1), concept maps are graphical tools for organising and representing knowledge. They include concepts, usually enclosed in boxes of some type, and relationships between concepts indicated by a connecting line linking two concepts. Concept maps can be described as “two-dimensional, hierarchical, node-link diagrams that depict verbal, conceptual, or declarative knowledge in succinct visual or graphic forms” (Quinn, Mintzes & Laws 2003:12).

Concept maps, put simply, aim to show “how someone see the relations between things, ideas, or people” (White & Gunstone 1992:15). Chularut and DeBacker (2004:249) proposed that concept mapping is “a tool for representing the interrelationships among concepts in an integrated, hierarchical manner”.

The conceptual map in figure 2.1 descriptively explained the links between the concepts in the study. Concepts such as information literacy, information literacy and lifelong learning, information literacy and distance education were linked together in the diagram below. The concepts of integrating information literacy in higher education and the application of the constructivist theory were also linked together in a blending relationship.

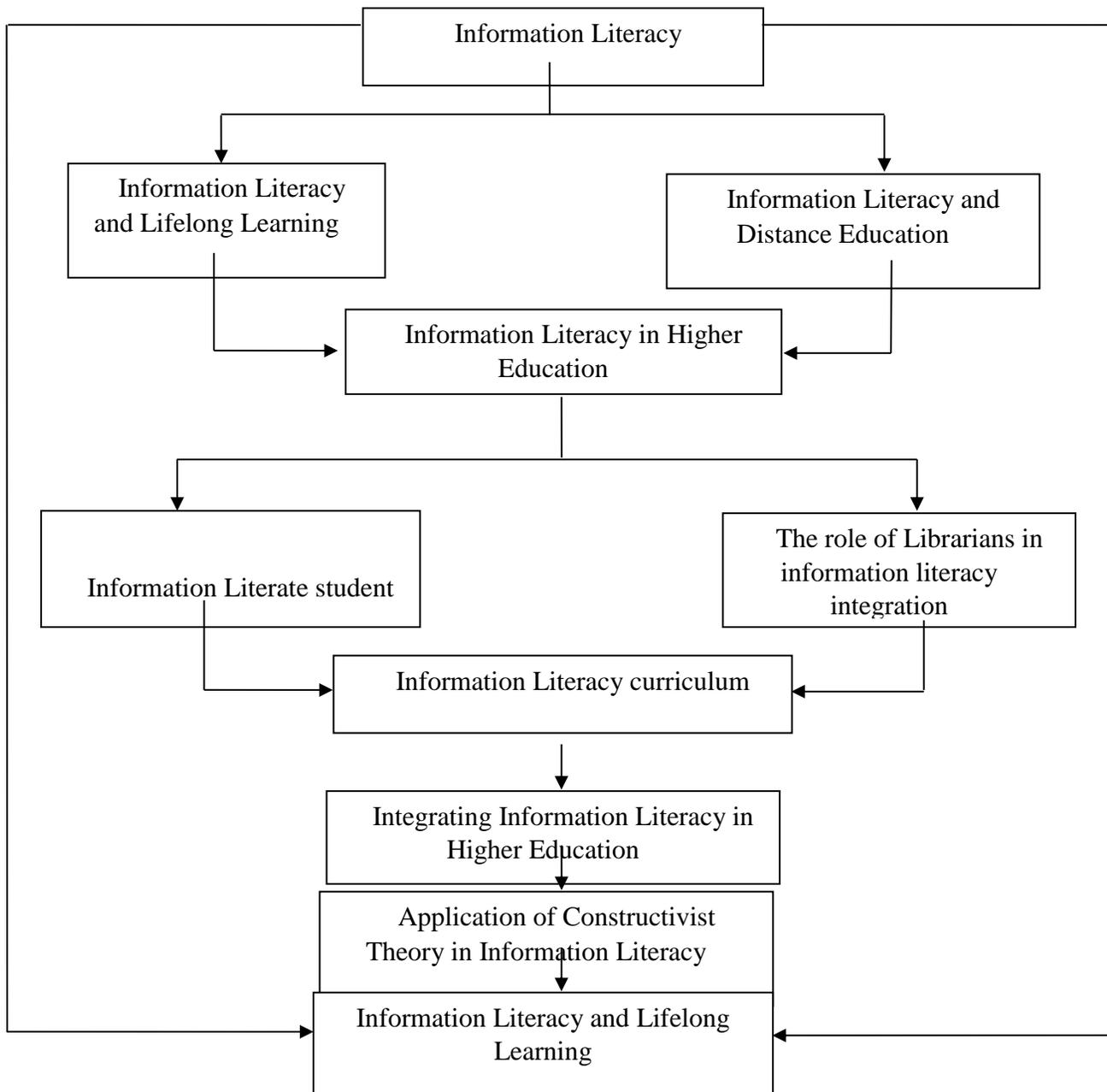


Figure 2.1: Concept Map on Information Literacy and Lifelong learning

2.3 Approach to Literature

A concept map of research literature was the approach used for the development of this literature. It started with the broad subject of information literacy at the top. This information was available from studying the National Open University policy documents and library documents. An in-depth study on related studies has been done to cover the topic of information literacy and lifelong learning. A synthesis and blend of the concepts of adult learning theory and constructivism helped look at the status of information theory and lifelong learning in open and distance education according to the literature that had been reviewed.

2.4 The Concept of Information Literacy

The concept of information literacy (IL) was introduced in 1974 by Paul Zurkowski in a proposal submitted to the National Commission on Libraries and Information Science (NCLIS), recommending that a national programme be established to achieve universal information literacy (Jiyane & Onyancha 2010, Eisenberg, Lowe & Spitzer 2004; De Jager & Nassimbeni 2002). During the 1980s this term gradually started to replace the concepts of ‘user education’ and ‘library skills’. The personification of the concept IL is stipulated in McCaskie (2004:9) who exposed its importance by giving the significant events of its lifespan which includes the establishment of the American Library Association’s (ALA) Presidential Committee on Information Literacy (PCIL) in 1987 and its subsequent report which followed in 1989.

The American Library Association’s (ALA) Presidential Committee on the Information Literacy (PCIL) report in 1989 linked IL to the goals of lifelong learning and effective citizenship. The underlying concept of IL is quite old, as libraries and information centres were already practicing the concept as library orientation, orientation programme, user education, bibliographical instruction, library instruction, and initiation of a freshman and user assistance programmes. All these are concerned with introducing new users to the library, its resources, tools, and general techniques of library usage, services, facilities and physical layout (Singh 2009:166).

The concept of IL has been promoted by library and information professionals for several decades. The most commonly cited and used IL definition is the one adopted by the American Library Association (1998:55-56) which states that:

“To be information literate, a person must be able to recognize when information is needed and have the ability to locate, evaluate, and use effectively the needed information. The information literate individuals are those who have learned how to learn.”

Zurkowski (1974:6) has earlier described ‘information literate’ individuals as “people trained in the application of information resources to their work”.

2.4.1 Definition of Information Literacy

Many definitions of IL address learning as an ongoing, developmental process, a continuous evaluation of and adaptation to the information environment. Writers have often said that “information literacy cannot be seen as something to be addressed once and then ignored. It is an

integrated part of lifelong learning which must be recognized, enhanced and continually updated” (Welsh Information Literacy Project, 2011:38).

According to Virkus (2003:np), several other terms and combinations of terms have also been used by different authors to define information literacy such as: 'infoliteracy', 'informacy', 'information empowerment', 'information competence', 'information competency', 'information competencies', 'information literacy skills', 'information literacy and skills', 'skills of information literacy', 'information literacy competence', 'information literacy competencies', 'information competence skills', 'information handling skills', 'information problem solving', 'information problem solving skills', 'information fluency', 'information mediacy' and even 'information mastery'. Information literacy is common to all disciplines (be it humanities, medical sciences, social sciences, engineering and technology), all learning environments and to all levels of education.

The Middle States Commission on Higher Education (2003:32), defined information literacy as:

“... an intellectual framework for identifying, finding, understanding, evaluating and using information. It includes determining the nature and extent of needed information; accessing information effectively and efficiently; evaluating critically information and its sources; incorporating selected information in the learner’s knowledge base and value system; using information effectively to accomplish a specific purpose; understanding the economic, legal and social issues surrounding the use of information and information technology; and observing laws, regulations, and institutional policies related to the access and use of information.”

Hadengue (2004:396) stated that information literacy implies three independent but linked steps: becoming aware of your own information needs, being able to perform efficient information retrieval and being able to evaluate and use the results obtained.

The definition that has achieved wider consensus is that given by the Chartered Institute of Library and Information Professionals (CILIP 2004:np) which defined information literacy as “knowing when and why you need information, where to find it, and how to evaluate, use and communicate it in an ethical manner.” This definition implies several skills and these skills (or competencies) that are required to be information literate require an understanding of the need for information,

the resources available, how to find information, the need to evaluate results, how to work with or exploit results, ethics and responsibility of use, how to communicate or share your findings and how to manage your findings.

Bundy (2004a:4) opined that information literacy is an intellectual framework for recognising the need for understanding, finding, evaluating, and using information. Rockman (2006:1), however, argued that IL is no longer a library issue, but is the critical campus-wide issue in the twenty-first century. In line with the above, Scott and O'Sullivan (2005) supported the fact that IL skills must be incorporated throughout all areas of the school's curriculum, not just in library orientation classes or isolated skills presentations. In the information society, IL has become a necessity for everyone; it forms the basis for lifelong learning (Abid 2008). Everyone needs to use IL to make choices that arise every day.

Despite the definitional clarifications and observations, many librarians continue to debate the appropriate definition of information literacy (Owusu-Ansah, 2005:367). Bruce (1997) and Candy (2000) affirm that there is a growing appreciation of the importance and nature of information literacy and the need for contextualisation in specific institutions and disciplines is discernible. As in the rest of the world, the agenda is characterised by a range of interpretations of information literacy.

2.4.2 Information Literacy and Lifelong Learning

Information literacy is essential in the creation of lifelong learners (Wallis 2005:221). The idea and concept of lifelong learning, and the centrality of information literacy to the lifelong learning agenda, has made various inroads into different universities and higher institutions. Some libraries have been able to use the broad interest in lifelong learning to work closely with faculties in raising the profile of information literacy and constructing a university-wide focus on information literacy as a key to student learning (Bruce 2001:4).

Lau (2006:13) observed that information literacy is a “set of skills” that can be learned. These skills include a certain attitude toward learning, the use of tools, such as online tutorials, the use of techniques, such as working with groups, and the use of learning methods. Abid (2008) viewed

information literacy as a basic existence skill which forms the basis of lifelong learning and the key for students to become independent lifelong learner in the information society.

According to Heidi (2008:257), the Alexandria Proclamation on IL and lifelong learning defined IL as "comprising the competencies to recognise information needs and to locate, evaluate, apply and create information within cultural and social contexts. Information literacy empowers people in all walks of life to seek, evaluate, use and create information effectively to achieve their personal, social, occupational and educational goals."

There are different perspectives to the definition of lifelong learning (LLL). Various articles, such as the Council for the Advancement of Native Development Officers, have defined lifelong learning as an ongoing learning in formal, non-formal and informal ways, cradle to grave learning and knowledge building (CANDO 2011). Also, the community and social enterprise partnership glossary defined lifelong learning as the continuous development of skills and knowledge to enhance quality of life and employment prospects (CSEP 2011). According to Laala (2011:473):

“LLL will not only develop individuals to become responsible to themselves and their communities, but understand and be involves actively at all levels of their societies. If countries are to see LLL develop further, then everyone’s patterns of behavior, needs to change including: individuals, employers, and the providers of learning and qualifications.”

LLL is viewed as involving all strategies that are put in place to create opportunities for people to learn throughout their lifetime. It therefore should be a process of conscious continuous learning that goes on throughout life and is directed towards providing both the individual needs and that of the relevant community (Abukari 2004). LLL is the continuous process of building skills and knowledge during one’s life through experiences of life.

Information literacy and lifelong learning have a strategic, mutually reinforcing relationship with each other that is critical to the success of every individual, organisation, institution, and nation-

state in the global information society. Lau (2006:12) described the inter-relations of these concepts as largely self-motivated and self-directed, self-empowering and self-actuating.

LLL results from the integration of formal, non-formal, and informal learning to create ability for continuous lifelong development of quality of life (Laala 2011:473). Information literacy would enable an undergraduate to perceive, encode, decode, retain and use effectively information or learning materials. Through information literacy, students become more thoughtful and versatile in seeking and using information (Radomski 2000; Wright & Mcgurk 2000).

2.5 Distance Education

According to the National Policy on Education (FRN 2004), distance education is a system which encompasses education for all, education for life, life-long education, life-wide education, adult education, mass education, media-based education, self-learning, personalized learning, part-time studies, and much more. The goals of distance education include the provision of accessibility to quality education for those who otherwise would have been denied access to education and also to meet the special needs of employers by monitoring special certificate courses for their employees at their work place.

Keegan (1996) observed that distance education included the following five basic requirements:

- The quasi-separation of teacher and learner through the period of the learning process.
- The influence of an educational organisation for the planning of courses of study and preparation of materials, and for providing academic and student support services.
- The use of technology and media print, video, audio, or computer to carry the content of the course and provide a mechanism for interaction.
- The provision of two-way interaction and communication.

ICT has impacted on the quality and quantity of teaching, learning, and research in distance education. ICT provides opportunities for distance education students, academic and non-academic staff to communicate with one another more effectively during formal and informal teaching and learning (Yusuf 2005). Allen (2004) discussed the use of distance education or technological means of delivering instructional materials and believes that distance education will continue to expand across borders.

2.5.1 Information Literacy and Distance Education

The concept and application of distance education has been in existence for over 200 years (Duvall & Schwartz 2000). According to Owoeye (2009:np) several definitions have been offered by writers worldwide with regard to distance education (Rumble 1992 & Keegan 1996). Chung (2005) saw distance education as a combination of methodologies (print, audio, video, video conferencing, CD-ROMs and DVDs, computer applications and face-to-face) through which education can be provided to students by teachers who may be separated from them in time and space.

Jurkowski (2005:23) confirmed that distance education may be considered by some as a relatively new development, but in reality it has been around for quite some time. In distance education, the use of the Internet and the World Wide Web has drastically changed the manner in which education is presented (Willis 1993). Distance education proved popular among students who were restricted due to location, employment, and family responsibilities, and was especially helpful to anyone with family and time constraints (Busacco 2001). The growing enrolment consisted primarily of non-traditional students who had jobs, family obligations, travel obligations, or who were geographically bound (Culpepper 2001).

The fastest growing segment of education is distance education. According to O'Leary (2002) it can be defined as education delivered to remote locations using technology. Brindley, Walti and Zawacki-Richter (2008:16) defined distance education as a form of learning and teaching in which technical media are used to bridge the distance between the parties involved in the learning process. Niemi, Ehrhard and Neeley (1998:65) confirmed that:

“Today’s communications technology is enabling institutions of higher education to reach populations in a variety of settings such as businesses, colleges, hospitals, and prisons.”

Dhanarajan, (2001) considered distance education as the means by which the teacher is taken literally to the student. It is a teaching and learning process in which students are separated from the teachers by a physical distance which is often bridged by communications technologies. In a more recent definition, Moore and Kearsley (2012:2) defined distance education as teaching and planned learning in which teaching normally occurs in a different place from learning, requiring communication through technologies as well as special institutional organization.

In discussing information literacy in relation to distance education, the ACRL Information Literacy Competency Standards for Higher education (2008:np) stated that:

“The library must provide information literacy instruction programs to the distance education community in accordance with the ACRL (2000) Information Literacy Competency Standards for Higher Education . . .”

Consequently, this implies that in the field of distance education, there is an opportunity for librarians to promote their role as information specialists by establishing effective support services (Kirk & Bartelstein 1999). Casado (2001) added that it is inevitable that as distance education expands, librarians become stronger and more important players as information tutors.

The Association for College and Research Libraries (2008:np) posited that the attainment of lifelong learning skills through general bibliographic and information literacy instruction in academic libraries is a primary outcome of higher education and, as such, must be provided to all distance education students. O’Leary (2002) concluded that library services are an essential element that distance education programmes must provide.

2.5.2 Adult Learners in Distance Education

According to Moore and Kearsley (1996:153), distance education students are adults between the ages of 25 (twenty-five) and 50 (fifty), these age level have evolved over time because currently students much younger than the age of 25 and older than 50 (fifty) are being admitted in the National Open University of Nigeria Consequently, the more one understands the nature of adult learning the better one can understand the nature of distance education. Adult learners are different from traditional college students. Many adult learners have responsibilities (e.g., families and jobs) and situations (e.g., transportation, childcare, domestic violence and the need to earn an income) that can interfere with the learning process but they enter educational programmes voluntarily and manage their classes around work and family responsibilities.

Merriam and Caffarella (1999) added that a strong characteristic of an adult learner is that most adult learners are highly motivated and task-oriented. In the midst of their peculiarities, adult students have to find a proper balance between growing demands at work and in their personal lives. Their learning activities have to compete with limited resources that adults generally possess in terms of time, energy and finances (Eastmond, 1998; Giancola, Grawitch, & Borchert 2009).

The pace of technological change has increased so quickly that it has significantly affected every area of modern living including the distance education and the study pattern of the adult learner. Recent technological developments have introduced world-wide collaboration, social networking, virtualisation of resources and participants, video-conferencing, on-line/off-line e-learning, etc. into the learning process (Brady, Holcomb, & Smith 2010; Lawson, Comber, Gage, & Cullum-Hanshaw 2010; Longworth 2013). Malinovski et al. (2015) observed that distance education has created new opportunities for information and knowledge transfer, separating the teacher, as a source of information, and the students through time and space.

2.6 Information Technology and Information Literacy

Information and Communication Technology (ICT) is the use of computers and other electronic technologies for creating, acquiring, and storing, processing and communicating information. Information literacy is related to the concepts of information skills and information technology literacy. According to Ogunsola, Akindojutimi, and Adenike (2011:86), it is very difficult to separate computer knowledge, ICT, information literacy and librarians from each other. According to Okojie (2012:4), ICT literacy is the ability to use technologies that contain information, while information literacy refers to the intellectual ability involved in using information. The ICT is essentially a channel, conduit or tool that requires a skill to effectively manage hardware and software that will provide access to information in electronic format while IL is a process whereby an individual identifies an information need, determines the source and medium to find the information and uses it in an ethical and logical manner. ICT and IL are closely related because the digital and electronic formats are gradually replacing printed materials in libraries (Lai 2011:82).

In an increasingly technological society, the means of authoring, information finding and organisation and research, and even information use, are increasingly mediated by information technology. And much of today's information technology and supporting infrastructure is intended to enable communication, information finding, and information access and information delivery (Lynch 1998:2).

According to UNESCO (2002):

“Information and Communication Technology (ICT) can create new learning environments shifting the emphasis from a teacher-centered to a learner-centered environment; where teachers move from being the key source of information and transmitter of knowledge to becoming a collaborator and co-learner; and where the role of students changes from one of passively receiving information to being actively involved in their own learning. More than any other previous technology, ICT provides learners access to vast stores of knowledge beyond the school.”

Information literacy involves the knowledge and use of skills or competences that together make for effective and appropriate use of information (Baro, Endouware & Ubogu 2011:107). It is essential that Students acquire both information and the skills to use it if they are to be able to cope in a fully formed, modern information-based society (Idiodi 2005:226).

2.6.1 Information Literacy in an Online Environment

With the introduction of technology, knowledge gaps are widening and creating the greater need of IL for everyone to be competent to handle the evolving technology in the global marketplace (Singh 2009:164). According to Mutula, Kalusopa, Moahi and Wamukoya (2006:169), ICT in general, and e-learning technologies in particular, provide the opportunity to enhance participatory teaching and learning from anywhere and anytime; facilitate joint group work; provide the opportunity for reduced costs; encourage self-directed learning, and enable students to maintain electronic portfolios of their work. With this technological trend, libraries are increasingly finding it necessary to take their traditional library instruction (or information literacy) efforts into the online environment in order to reach the ever-increasing numbers of students who are choosing to pursue their education via web-based means (Allen 2008:22).

Numerous institutions have experimented with face-to-face, online, and blended forms of instruction and there seems to be no common or definitive conclusion and one can easily find examples to support both sides of the debate in the articles written by Adolphus (2009), Anderson and May (2010), Herring, Burkhardt and Wolfe (2009), Hines (2008), Holman (2000), Jayne (2000) and Reid (2009). One reason for this is that online instruction is still relatively new and instructors are still experimenting, developing best practices and discovering the relative merits

and drawbacks (Reid 2009). Jayne (2000) argued that the only sure way to reach all students is to provide services in as many formats as possible. A blended approach – which pairs online and face-to-face instruction – offers precisely these kinds of opportunities for effective scaffolding of learning (Lapidus 2012; Usova 2011; Kraemer, Lombardo & Lepkowski 2007; Anderson & May 2010).

In a study of academic business libraries, Dunsmore (2002) provided four principles or rules of creation that can be applied to online information literacy material. These principles are:

- transparency (clearly explained and free of jargon);
- consistency (easily recognised/identified and used, using terminology consistent within institution and sector);
- selectivity (users directed to relevant, quality resources); and
- accessibility (easy to find).

Higher education and libraries in particular, have changed significantly over the last decade due to the adoption of technological advancements such as the Internet and the World Wide Web. Learning technological-know-how is a must in modern academic librarianship. It is becoming very necessary by the day for the academic library to key into the technological advancements in all areas of its services to its users. According to the 2007 Sloan Survey of Online Learning in the US higher education (Stover 2007), the enrolment in online learning has increased at a rate of 21.5 percent over the past five years. The survey also found that almost one in five higher education students currently take at least one class online. This is a new challenge for libraries in higher education.

In the past and in some countries different universities have designed and set up different online modules to successfully integrate information literacy into the university system (Dadzie 2008, Vishala & Bhandi 2006, Virkus 2004 & Rader 2002). In the context of the Open University, the production of information literacy material in the online environment is a relatively recent development for the library. For example, a skill in accessing, finding and reviewing information (SAFARI) was launched at the end of 2001. It is a stand-alone interactive, online information literacy tutorial in seven sections, designed for all Open University undergraduates and is freely

accessible by the wider public(Wales & Robertson 2008:370). Similarly, a new approach being tested at the Open University is Making Sense of Information in the Connected Age, or MOSIAC.

Also, the Aalborg University Library project titled MILE (Model for Information Literacy Education) was initiated, aiming to create and test a model for user instruction in information literacy, based on innovative pedagogy and ICT. The product consisted of a combination of multimedia or web-based just-in-time tutorials, as well as live instruction integrated into the teaching/learning process. Tutorials were particularly effective in developing task-oriented skills in students, such as database searching, along with mid-level thinking skills, such as the application of concepts (Reece 2007).

The advantages to porting entire instructional programmes into online environments are many. A student can work at his or her own pace and access the instruction at a time that is most convenient. The ability to include multi-media and hyperlink text can make the instruction accessible to a wide variety of learning styles (Allen 2008:29).

2.6.2 National Open University Virtual Library

Electronic library services are a vital and indispensable element of student support for campus students as well as distance learners. The Association of Theological Schools (ATS) Handbook of Accreditation (2008) stated that the library must integrate print collections, provide access to electronic information and other resources to foster information literacy. Popoola (1992) also maintained that “the library plays a central support role in ODL and must be responsive to curriculum development; to group and individual learning needs and to changes in teaching methods . . . the library has an important role to play in helping to overcome problems, facilitate learning, and develop skills.”

According to “Getting to know your University” (a student guide), the use of technology to support the learners as an initiative in the National Open University of Nigeria complements activities of the conventional universities. The National Open University’s webpage confirmed that the NOUN library (the Information Gateway), is a library established to support teaching, learning and research activities of the University. Its major aim is to facilitate access to scholarly information resources (NOUN 2006).

From the University's website, NOUN library provides reference, information literacy, circulation, and current awareness services among others. Internet access through local area networks and wireless connectivity is running 24/7. The library building is also fully furnished to provide services to users who prefer print copies of books and periodicals. The library's collection has more than 60 000 volumes of books and 200 000 volumes of electronic resources. It has a growing periodical and audio-visual collection.

The NOUN virtual library provides an online service centre for accessing databases in other e-libraries all over the world. According to Otubelu (2011), the virtual library of the National Open University of Nigeria has formed a consortium with other Open University libraries in Africa through this medium and provides access to varied resources to its users. The information gateway has more than 30 databases and offers access to more than 1 000 journals and many other types of information. Despite all that's stated above, Igwe (2013:1) observed that distance education presents new challenges, especially in the provision of library and information services. Therefore, it is imperative to clearly define and devise strategies for effective library service to distance learners.

2.7 Information Literacy in Higher Education

There are many factors associated with undergraduate usage or non-usage of academic libraries. A core reason according to Mason (2010:3) is that "many students come to the University unprepared and unequipped to handle the demands of their course work, primarily because they have no experience in library usage and have not acquired the skills needed to do meaningful research." Mason observed that this is "not the fault of the student but is indicative of the problems inherent in the public educational system gone astray."

Gyimah (2011:34) posits that information literacy instruction programmes in tertiary institutions have taken a variety of forms such as stand-alone courses or classes, web-based tutorials, course-related instruction, or course-integrated instruction. Some authors seem to agree that information literacy can be integrated into the subject areas (Kemp 1999, Joint & Kemp 2000, Town 2002). Webber and Johnston (2000:381-397) on the other hand differ by advocating that information literacy can be treated as a discipline of study in its own right. However, there seems to be a consensus on the need for a collaborative approach in the development and implementation of the

information literacy instruction programme. The trend is towards an increasing emphasis on lecturer-librarian partnership and the application of modern information communication technologies (ICT) in delivering information literacy courses.

The growth of information in multi-media formats compels students to learn how to find, select and use a wide range of resources. Higher education must develop the habits and skills in their students for the effective usage of these information sources in order to produce qualified individuals who are ready to engage in the lifelong pursuit of knowledge for personal and professional growth (Gyimah 2011:34).

According to Peacock (in Wang 2007:150), current information literacy instruction in higher education can be approached in four main ways. These are intra-curricular, inter-curricular, extra-curricular and the stand-alone information literacy programmes.

- *Intra-curricular information literacy instruction*

This type of information literacy instruction programme is integrated into learning outcomes, learning activities, or assessment of an academic course or a teaching programme, commonly through collaborative partnerships between academic and library staff.

- *Inter-curricular information literacy instruction*

This type of programme is provided as an add-in session for an academic course or programme by the library in consultation with or at the request of an individual academic staff. Normally, attendance is a requirement of the course or programme.

- *Extra-curricular information literacy instruction*

This type of information literacy programme is provided by the library outside of an academic curriculum and attendance is voluntary.

- *Stand-alone information literacy instruction*

This type of information literacy programme is taught as an independent course and is solely devoted to information literacy as part of the students' curricula. The stand-alone information literacy course is either taught as a compulsory course or as part of the general education

programme offered in a faculty or university. Presently, the type that is being used in the National Open University of Nigeria is inter- curricular literacy instruction where the “Use of Library” is inculcated as part of the course outline of the compulsory course GST 105/107.

Laala (2011:473) affirmed that educational institutions must offer facilities that meet the needs of learners at various levels of competence throughout their lives. Individuals must acquire a new mind-set; learners are no longer passive receivers of knowledge, but need to be active researchers, constructors, and communicators of knowledge. Learners must be able to use LLL facilities to upgrade their knowledge, skills and competence in a discipline as required. They can also contribute to the facilities by sharing knowledge and supporting other learners.

Some of the major problems with information literacy in higher institutions is that many academics do not view librarians as partners who can help them to instruct information literacy skills and research strategies to students. They are reluctant to integrate information literacy into the curriculum. Serotkin (2006) indicated that academics consider information literacy to be the responsibility of the library. Curzon (2004) also added that “Most information literacy programs fail because they are parochial and eventually come to be seen only as a library effort.” Academics believe that information literacy is something that is taught somewhere else (Johnston & Webber 2003) and many academics are “ill-disposed” towards collaborating with librarians to facilitate integration of information literacy into the curriculum (Stubbings & Franklin 2006; Holtze 2002).

Shenton and Fitzgibbons (2010:171) posited that information specialists have the opportunity to increase the effectiveness of their teaching by embracing students’ existing behaviours and facilitating the incorporation of new knowledge and skills in their institutions. This is very necessary in developing the information literacy skills of students in an institution.

2.7.1 Information Resources in Academic Libraries

According to Yusuf and Iwu (2010:1), the academic library is the nerve centre or the hub around which scholarship revolves. It is an indispensable instrument for intellectual development. A well-stocked academic library is a storehouse of information, or a record of human experience to which users may turn to for data or information. According to Jubb and Green (2007), academic libraries have for many centuries played very important roles in supporting learning, teaching and research in their host universities or colleges. MacWhinnie (2003:6), the library has been seen as the heart

of the academic institution, a place of fundamental importance to every researcher, teacher and student in the university.

The main purpose of an academic library as stated by Aina (2004) is to support the objectives of an academic environment in the areas of learning, teaching, research, and service. Abubakar (2011) submitted that academic libraries are at the forefront of providing information services to their respective communities comprising of students, lecturers, and researchers in order to support their teaching, learning and research needs emphasising the crucial role of academic libraries in research and scholarship in institutions of higher learning.

Users now expect access to information in a wide variety of formats, including print, electronic, and multimedia, leading to a greater need for research assistance from librarians. Students require the expertise of an information specialist to make the most of the resources available and find the information they need, and the librarian's role will become increasingly essential as students seek guidance in navigating through the many layers of electronic information resources (MacWhinnie 2003:6). Singh and Kaur (2009) observed that there is a paradigm shift from standalone libraries to library and information networks; from printed publications to digital documents; and from ownership to access. Academic libraries also began transforming their spaces, facilities and services, including automating their circulation services and implementing virtual reference services (ALA 2013).

Popoola (2001) observed that, despite all these changes, information availability does not only mean accessibility and use of resources but academic libraries should also stimulate primary demand for their products and services. This view is upheld by Mason (2010), who opined that librarians must be sympathetic and helpful to all students on the one hand and that on the other hand students must be aware that librarians and faculty members are there to instruct and encourage their intellectual odyssey and should be seen as facilitators.

2.7.2 Information Literate Student

The term "information literate" can be used to describe how a person manages the current exponential increase in information, and the electronic/computerised access to that information. It is becoming increasingly apparent that colleges and universities must enable students to develop information and technology literacy skills. At the present time, it is no exaggeration to infer that

information literacy is a vital component in the development of critical thinking (Johnson 2007:104). The importance of students being able to access and evaluate information is also highlighted in several other strategic documents such as Spitzer, Eisenberg and Lowe 1998; Riley Holleman and Roberts 2000; Muir and Oppenheim 2001; Koch 2001.

Within the context of various disciplines, a successful information literacy programme requires an individual to be able to define the problem; initiate a plan to find information; locate and access resources; use the information; synthesise information; and carry out some forms of evaluation (Baro, Endouware, & Ubogu 2011:109). Doyle (1994:2) defined an information literate person on the basis of a number of individual attributes and concluded that information literacy is a thematic synthesis of the skills that individuals will need to live in the information age.

Bundy (2004b:11) identified six core standards which underpin information literacy acquisition, understanding and application by an individual. These standards identified that the information literate person:

- recognizes the need for information and determines the nature and extent of the information needed
- finds needed information effectively and efficiently
- critically evaluates information and the information seeking process
- manages information collected or generated
- applies prior and new information to construct new concepts or create new understandings
- uses information with understanding and acknowledges cultural, ethical, economic, legal, and social issues surrounding the use of information.

In addition to the above, Lloyd (2004:223) confirmed that information literacy is the route to active participation in the information-driven society. It gives students the necessary skills and inculcates lifelong and independent learning skills which are a prerequisite for problem-based and problem-solving learning (Rasaki 2008:6). Information literate students have a deep awareness of, connection to and fluency with the information environment. Information literate people are engaged, enabled, enriched and embodied by social, procedural and physical information that constitutes an information universe. Information literacy is a way of knowing that universe.

The majority of students in higher institutions have very little or no library experience, computer literacy, and information searching skills. Guise, Goosney, Gordon and Pretty (2007) reviewed entry-level students' research skills and concluded that they were unprepared to meet the needs of first year research requirements. Bundy (2004a:4) expressed concern about the ability of first year students to become information literate when entering university study. Students need a framework by which to recognise the need for "understanding, finding, evaluating and using information".

Ellis and Salisbury (2004) observed that students commence university with limited information seeking skills. The results of this study provide the evidence to accept that students do not bring skills to university that are commensurate with their current level of educational attainment. The findings demonstrated that entry-level students have some skills which are not enough for independent research work or library usage. This problem emanated from students being educated in environments with poor learning facilities, such as a lack of well-equipped school libraries with computers, and a failure to identify the school library (if it even exists) as a learning resource. Several other articles from different African countries such as those by Idiodi (2005), Mchet (2005) and Obajemu (2002) have reported on this regrettable situation. To ensure that students are able to access and use information effectively by the time they graduate, it is therefore necessary to sequentially develop their information literacy skills during their progress through university (Salisbury & Ellis 2003).

Thus there is a need to rehabilitate the perception of information literacy and recognise that it is not merely a set of skills and competences, but a continuum that starts with skills and competences and ascends towards high-level intellectual and metacognitive behaviours and approaches. It is a "complex of different ways of interacting with information" as stated by Bruce, Edwards and Lupton (2006:6) and, as such, a fundamental component of learning, scholarship and research.

2.7.3 Information Needs of Undergraduate Students

Information literacy is important to higher education as it is a part of, and contributor to, lifelong learning. Inherent in the mission of university education institutions is the development of lifelong learners who continue to learn beyond their formal education. Due to information literacy's importance in the higher education curriculum, certain regional and discipline-based accreditation associations now consider it as a significant outcome for university students in developed countries (Chipeta 2010:25).

Kunkel (1996:430) observed that thousands of students enter the universities with varying experiences depending on where they attended school previously; the size and status of the institution and the level of their interest and intellect. Students today need the skills that will enable them to access and navigate the growing universe of information, to select appropriately the credible and reliable information they need to read critically and think independently as they produce their own ideas, and then to use that refined information for their academic courses (Middle States Commission on Higher Education 2003:4).

Ajiboye and Tella (2006:46) in the assessment of students' needs asserted that "the predominant information required by undergraduate students is academic information". This is confirmed in their study carried out in the University of Botswana to examine the information seeking behaviour of undergraduate students. The study revealed that academic information was rated the highest with 1 282 students (64.1%); other required information which may not be as vital as academic information was rated low. Similarly, Kakai, Ikoja-Odongo and Kigongo-Bukenya (2004:22) in their findings on the reasons for undergraduates searching for information in Uganda, revealed that the main information demands that led undergraduate students into searching for information were those that had to do with academic information, for example for information for assignments, projects and examinations.

The American Library Association (2006:5) stated that:

"Gaining skills in information literacy multiplies the opportunities for students' self-directed learning, as they become engaged in using a wide variety of information sources to expand their knowledge, ask informed questions, and sharpen their critical thinking for still further self-directed learning."

Whitworth (2006:1) considered the acquisition and development of information literacy skills as the defining characteristic of the discerning scholar, the informed and judicious citizen, and the autonomous learner.

2.7.4 The Role of Librarians in Information Literacy Development

The function of the academic library has shifted from a centre in which physical collections of resources are managed to a significant point of delivery for important services (Brophy 2005). In the present information-intense environments, an important mission of libraries is to facilitate the

development of users' IL skills so that they can be successful. Librarians' roles are no longer said to be the traditional keepers of information but rather teachers of information (Albrecht & Baron 2002). The tasks of engaging learners with the principles of information literacy (IL) and then ensuring that they apply the associated knowledge, skills and understanding effectively in appropriate situations are among the greatest challenges faced by information professionals working in educational settings (Shenton & Fitzgibbons 2010:165).

Librarians and information science (LIS) specialists can contribute to students' learning in a number of ways: by providing structured access to information, by helping students to learn about how to evaluate information with respect to accuracy, timeliness and relevance, and to compare different sources. Librarians and other information specialists should be promoters of information literacy programmes and activities because their library or information centre is repository of knowledge, an information reservoir in multiple formats, a centre with librarians who are information experts, space for knowledge socialization, a centre with computer access, processing and communication of knowledge and a gateway to the Internet, a world of information (Lau 2006:14).

Barkas (2011) observed that learning should become a negotiation of meaning between students and teachers and from that standpoint Bent (2008:47) opined that librarians should engage students in reflecting on their own information literacy, "rather than just 'doing it to them'." As the learner's abilities grow, the assistance formerly available is gradually withdrawn until he or she can learn independently (Chang Sung, & Chen 2002:7). Munro (2006:53) emphasised that ". . . as universities and other institutions evolve to give students more autonomy, flexibility, and seamless access to tools and resources, libraries and librarians must evolve too." According to Fjälbrant (2000:259) information professionals have considerable training in the process of structuring information. This can be used to remove some of the feeling of chaos and uncertainty experienced by many people. LIS staff can provide 'filters' based on subject, academic level, language and so on, so as to reduce the information overload on students and researchers.

Hooks (2005:249) opined that real information literacy is not likely to materialise if librarians are not willing to break from many of their traditional roles. Librarians need to re-think their information provision methods. Librarians are increasing their efforts to cultivate student proficiencies in higher-order processes, such as information navigation, analysis and evaluation

and more emphasis should be placed on this (Reece 2007; Shank & Bell 2011; Anderson & May 2010).

2.8 Information Literacy Curriculum

With the complex nature of information in the information age, the role of university libraries has become more critical because of the added responsibility to provide information in the most appropriate format as well as to authenticate the reliability of the source (Okojie 2012:10). According to Hiscock and Marriott (2003), embedding the skills into the curriculum is a strong way to develop information literacy skills in students. They can be taught the skills in a variety of ways within the curriculum and have the skills constantly reinforced throughout their academic career.

It appears that the challenge for the academic community, and the librarians who work together with them, is to ensure that the skills taught in IL programmes are relevant, regularly repeated, well publicised, have sound instructional design and relevant modes of delivery, and are extended into all areas of the curriculum (Hartmann 2001). As information literacy instruction has evolved over time, two major models for developing IL programmes in higher institutions have emerged: the separate or compartmentalised model and the integrated or distributed model. It also is possible to combine these two strategies to achieve the institution's desired learning outcomes. In addition to its place in the curriculum, information literacy also may have an important role in the formal extra-curricular programmes at the institution (Middle States Commission on Higher Education 2003:14).

Bruce (1999:36-42) developed a model of teaching and learning process and styles to be integrated into the curriculum for better attainment of organisational and academic excellence in academic institutions and alike. She called them the seven faces of information literacy. They are available in Bruce (1997) and are briefly summarized here as:

- *The information technology experience:* Information literacy is seen as using information technology for information retrieval and communication. At the heart of this experience lies the importance of information technology for information access and personal networking. Category one identifies a way of experiencing information literacy that is dependent upon the availability and usability of information technology.

- *Information sources experience:* Information literacy is seen as finding information located in information sources. Here information literacy is experienced in terms of knowledge of sources of information and an ability to access these independently or via an intermediary. It is knowledge of information sources which makes it possible to retrieve the information which is contained within them.
- *The information process experience:* In this category information processes are the focus of attention. Information processes are those strategies implemented by information users confronting a novel situation in which they experience a lack of knowledge (or information).
- *The information control experience:* In this experience information control is the focus of attention. There are three subcategories reflecting different forms of control:
 - control of information is established using filing cabinets.
 - control of information is established using the brain or memory via various forms of links and associations.
 - control of information is established using computers to allow storage and retrieval.
- *The knowledge construction experience:* In this and subsequent kinds of experience, information use becomes the focus of attention. Critical information use, for the purpose of constructing a personal knowledge base, is the distinguishing feature of this conception. Information, in this experience, becomes an object of reflection and appears to individual users in unique ways; it takes on a 'fluid' or 'subjective' character. The information user is involved in evaluation and analysis, whilst the information presents itself uniquely to the user.
- *Knowledge extension experience:* Information use, involving a capacity for intuition, or creative insight, is the distinguishing feature of this experience. Such intuition or insight usually results in the development of novel ideas or creative solutions. The knowledge base is recognised by participants as being an essential part of this way of conceiving of, or experiencing, information literacy.
- *The wisdom experience:* Wise use of information, involving the adoption of personal values in relation to information use, is the distinguishing feature of this conception. Wise use of information occurs in a range of contexts including exercising judgement, making

decisions, and doing research. Wisdom is a personal quality brought to the use of information.

The Boyer commission on educating undergraduates (1998) affirmed that undergraduate education should be designed as a continuum that prepares student for continual learning and professional work through developing their talents to answer information questions and seek answers. Bruce (1999:46) opined that for assessing information literacy programmes in learning organisations, educators (librarians) need to consider whether their curriculum explicitly provides opportunities for students to use information technology for information awareness and communication and to come to know a range of relevant bibliographic, human and organisational information sources. Bruce concluded by saying that information literacy is about people's ability to operate effectively in an information society. This involves critical thinking, an awareness of personal and professional ethics, information evaluation, conceptualising information needs, organising information, interacting with information professionals and making effective use of information in problem-solving, decision-making and research (Bruce 1999:46).

2.8.1 Integrating Information Literacy in Higher Education

Today, IL has become an issue of global attention. Schools and institutions of higher learning have initiated incorporating IL programmes in their curricula. It is important to constantly keep in mind that information literacy is really for the students. Hook and Corbett (2005:251) opined that Information literacy must be incorporated in the curriculum in a way that will encourage students to see the value of using it in their academic studies. In the works of some Nigerian writers such as Issa, Amusan and Dauda (2009), Igwe and Esimokha (2012), Ilogho and Nkiko (2014), there is an absence of information literacy in the curriculum of the majority of schools in Nigeria.

Since IL competencies have been identified as a crucial element to foster lifelong learning and keeping up with the fast changing world, integrating IL learning into education at all levels should be a priority concern (Badke 2008; Snavely 2008). Information literacy is the basis of lifelong learning and the key for undergraduates to become independent learners in learning society. Information literacy can not only help college students effectively identify, evaluate, review and use information from diversified information resources in their learning process, but also help college students apply information to solve problems creatively (Sun & Lui 2011:230). Idiodi

(2005: 223) added that not only is information literacy central to achieving personal empowerment and economic development (a particular concern in the Nigerian context), but it is also pivotal to the pursuit of lifelong learning.

Information literacy is a major factor in the success of undergraduate education. Studies, which include ACRL (2000), Bracke and Critz (2001) highlighted the relevance of information literacy to undergraduates while Lenox and Walker (1993) described the information literate undergraduate as one with the analytical and critical skills to formulate research and access a variety of information types in order to meet his/her information needs.

The basis of critical thinking in information literacy instruction rests on the premise of another value of information literacy, that of collaboration between librarians and academic faculty for the goals of curriculum integration and disciplinary teaching. The American Library Association (2000:5) emphasised that:

“Achieving competency in information literacy requires an understanding that this cluster of abilities is not extraneous to the curriculum but is woven into the curriculum’s content, structure and sequence.”

Concerns about integrating information literacy into the curriculum have been in the forefront of the higher education literature in the recent past. Putting an information literacy/lifelong learning programme in place cannot be done exclusively by librarians in libraries. This enormous task is the responsibility of all the learning community: teachers, faculty, students and society in general. A team must be formed, and partners identified who can work with the librarian (Lau 2006:13).

Collaboration is the key to building partnerships for learning. It has a vital role since the librarian works with teachers, administrators, parents and other members of the learning community to "plan, design, and implement programs that provide access to information that is required to meet students' and others' learning goals" (AASL/AECT 1998:51). Successfully integrating information literacy requires the feedback of academics (Derakhshan & Singh 2011:219).

In the persuasion for the integration of information literacy in higher education Bruce (2002:3) stated clearly that “Information literacy ... is clearly part of the fabric of learning; and, if students are to learn to learn from the resources available in information rich environments, it must be

woven into the learning experience”. Information literacy is a fundamental component of the educational process at all levels and one of the primary outcomes of higher education (Dewald 2000).

According to Wang (2011:704), the words ‘integration’ and ‘embedding’ are used interchangeably in much literature. This is supported by several studies (Feldmann & Feldmann 2000; Welker, Quintiliano & Green 2005). Different authors have undertaken extensive research on the issue of integrating information literacy in Higher Education. Wang (2010) recently conducted research as part of her PhD study to investigate how information literacy can be integrated in an undergraduate’s academic curriculum and strongly recommended for the integration of information literacy in academic programmes

Other authors like Callison, Bundy and Thomes (2005); Dakshinamurti and Horne (2006); Floyd Colvin and Bodur (2008) and Kobzina (2010) have worked collaboratively to integrate information literacy into academic courses. Jacobson and Mark (2000) also concluded that, from their years of experience of teaching undergraduates, the integration approach is the most effective.

Below is the information literacy integration model (see figure 2.2). According to Wang (2011:7), the model below represented the importance of information literacy guidelines and pedagogic theories in information literacy curricular development. It demonstrates that information literacy should be integrated into the intended curriculum and the offered curriculum (what the teachers teach) as well as the students’ received curriculum (what students actually learn). The model also revealed that a higher education curriculum can be redesigned and negotiated at different levels: the institutional level, programme level and at course or class levels.

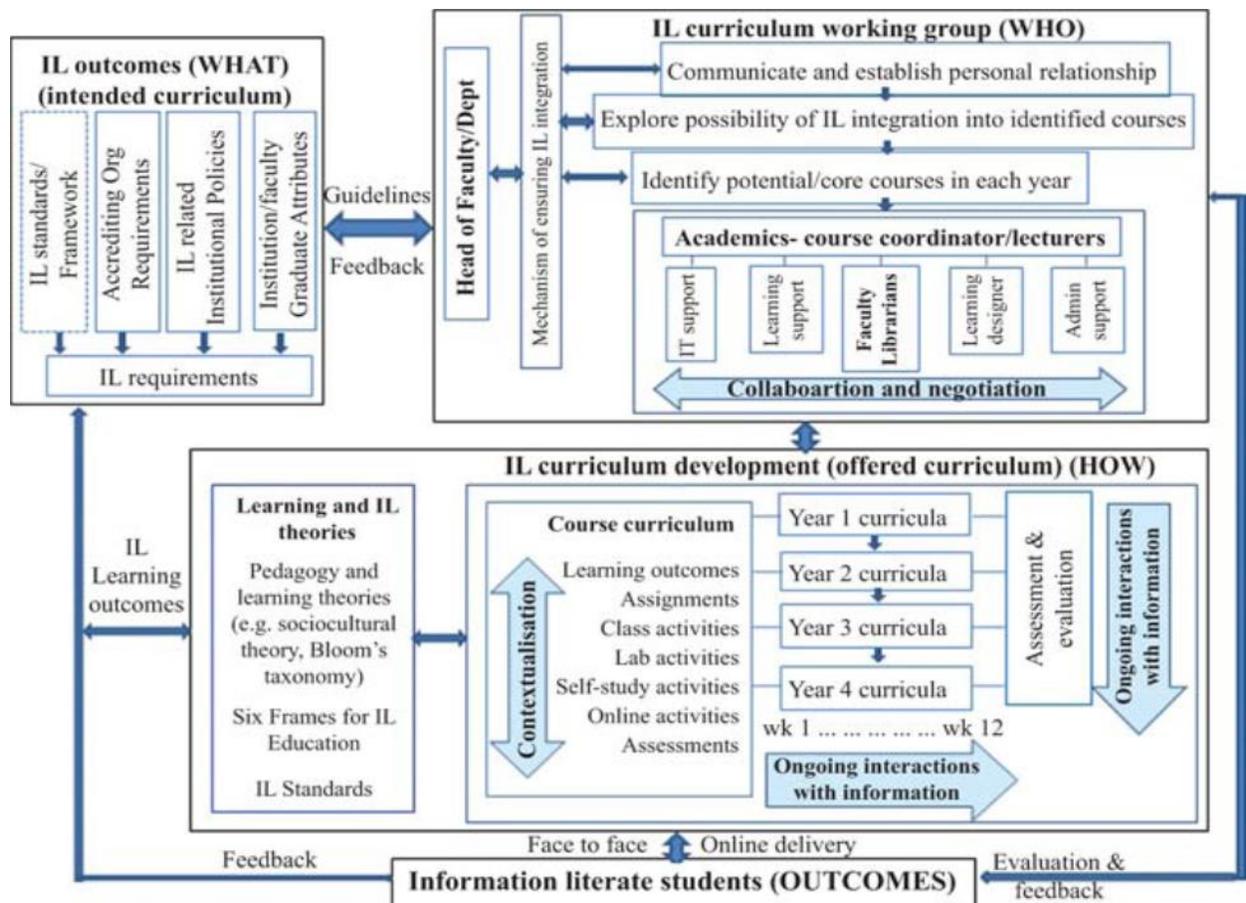


Figure 2.2: The information literacy integration model (Wang 2011:7)

The model represents the processes, people and resources essential for information literacy integration. The two-headed arrows indicate that this is a fluid, continuous process.

Towards the process of encouraging integration of information literacy in higher Education, different researchers like Sel matsela and Du Toit (2007) have emphasised that librarians teaching information literacy need understanding, knowledge and skills regarding the dynamics involved in the teaching of information literacy skills to make the programme a success.

2.8.2 Information Literacy Models in Higher Education

Information literacy lies at the core of lifelong learning. It empowers people in all walks of life to seek, evaluate, use and create information effectively to achieve their personal, social, occupational and educational goals. It is a basic human right in a digital world and promotes social inclusion of all nations (UNESCO, IFLA, & NFIL 2005). With the variations in the perception of information literacy and its processes, some approaches to information literacy and higher

education have been identified: The Information Literacy Competency Standards for Higher Education (ACRL 2000) and the Information Skills in Higher Education standard (SCONUL 1999). These approaches identified discrete skills and attitudes that can be learnt and measured in higher education.

Critical thinking is a foundational value in information literacy (Kerr 2010:38). The ACRL Information Literacy Standards for Higher Education declared “critical discernment and reasoning” as essential components of information literacy (ALA 2000:3). It also stated that critical thinking will help to sensitise them to the need to develop a metacognitive approach to learning, making them conscious of the explicit actions required for gathering, analysing, and using information. Some popular information literacy models in the past that have been applied in higher education are:

2.8.2.1 Information Literacy Competency Standards for Higher Education (ACRL)

The ACRL standards, originally published in 2000, have gained wide acceptance by librarians in colleges and universities and provide guidance for the knowledge (Standard One), access (Standard Two), evaluation (Standard Three), use (Standard Four), and ethics (Standard Five) of information sources Johnson (2008:103).

Information literacy, as expressed in the ACRL standards, serves a vital function in promoting critical thinking in the 21st century. In line with ACRL (2000), a lot of researches on information literacy and higher education are anchored on the Information Literacy Competency Standards for Higher Education formulated and reviewed by the Association of College and Research Libraries (ACRL): Its core standards for an information literate student are listed as:

- Standards one: the information literate student determines the nature and extent of the information needed.
- Standards two: the information literate student accesses the required information effectively and efficiently.
- Standards three: the information literate student accesses the required information and its sources critically and incorporates selected information into his or her knowledge base and value system.

- Standards four: the information literate student, individually or as a member of a group, uses information effectively to accomplish a specific purpose.
- Standards five: the information literate student understands many of the economic, legal, and social issues surrounding the use of information and uses information ethically and legally (ACRL 2000).

According to Baro, Endouware and Ubogu (2011) applying the information literacy standards involves the student's ability to identify information needs, to find, evaluate, use, and to accurately give credit for information used.

2.8.2.2 A New Curriculum for Information Literacy (ANCIL)

According to Martin (2013:3), A New Curriculum for Information Literacy (ANCIL), is a Cambridge University project that created an undergraduate information literacy curriculum in 2011. The project sought to develop a practical curriculum for information literacy that meets the needs of the undergraduate students entering higher education over the next five years. The ANCIL team designed the curriculum to be implemented throughout the undergraduate career. ANCIL is organised into ten strands starting with the student's transition into higher education and culminating in the transition out of higher education and into the workforce (including using skills in everyday life). According to Secker & Coonan (2011:7) ANCIL's ten strands are:

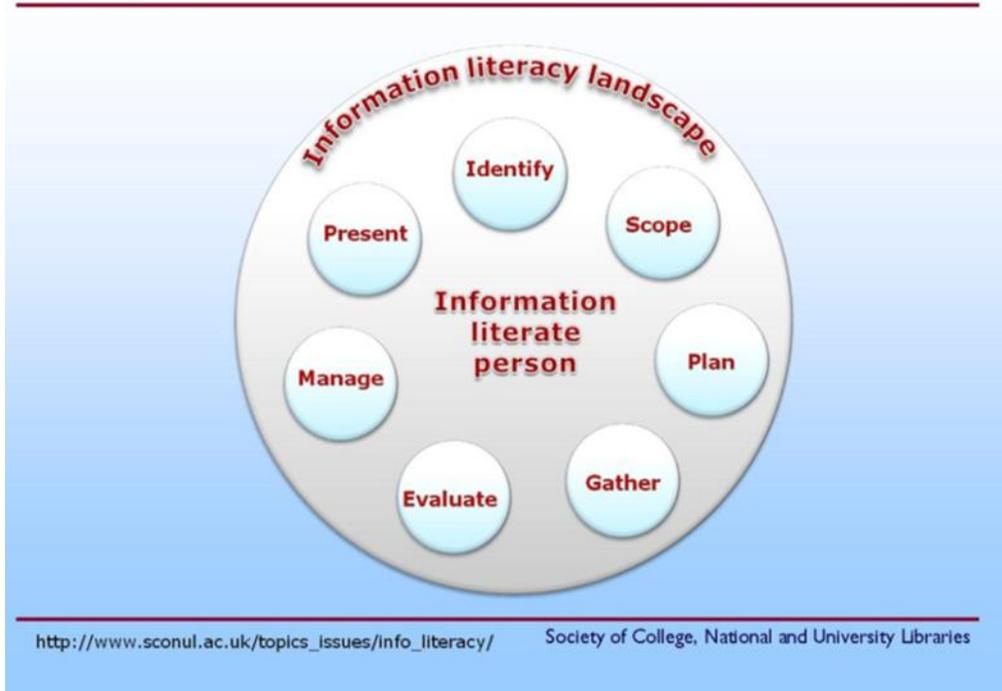
- Strand 1- (Transition from school to higher education)
- Strand 2- (Becoming an independent learner in contrast): is not linked to a specific transition point. Rather, it is informed by the idea that change occurs throughout the learning process as a natural, unavoidable and sometimes challenging aspect of learning.
- Strand 3- (Developing academic literacies): aims to explore and develop the academic literacies of reading and writing at both the functional, procedural level - skimming and scanning strategies, recognising and using appropriate academic idiom - and in higher-order activities such as textual interrogation and critiquing, argument construction, and understanding of a discipline's epistemological structure and values.
- Strands 4 (Mapping and evaluating the information landscape) and 5 (Resource discovery in your discipline) focuses on dealing with subject-specific information. Strand 4 focuses on developing awareness and understanding of the range of sources types available and how to evaluate them for reliability, authority and their appropriateness for the student's

specific purpose, while Strand 5 is intended to familiarise students with specialist resources of various types and content in their discipline. The underlying purpose of these strands is to enable students to become familiar with the information landscape of their discipline.

- Strand 6 (Managing information) focuses on practical, functional skills, many of which will be recognisable in existing library instruction courses. These remain key skills without which students will struggle to find, select, manage and process academic information efficiently.
- Strands 7, 8 and 9 Deal with the high-order cognitive and intellectual functions of information handling. These included critiquing and analysing material, synthesising viewpoints, formulating research questions, and the ethical dimension of information use and production.

2.8.2.3 Seven Pillars of Information Literacy (SCONUL)

The seven pillars of information literacy, also known as SCONUL published by the SCONUL Working Group on Information literacy is a prevalent information literacy model for British higher education. Originally created in 1999, the revised model was published in 2011. According to Bent and Stubbings (2011:3) developing as an information literate person is a continuing, holistic process with often simultaneous activities or processes which can be encompassed within the Seven Pillars of Information Literacy. Within each ‘pillar’ individuals can develop from ‘novice’ to ‘expert’ as they progress through their learning lives, although, as the information world itself is constantly changing and developing, it is possible to move down a pillar as well as progress up it (Martin 2013:13).



http://www.sconul.ac.uk/topics_issues/Info_literacy/

Society of College, National and University Libraries

Figure 2.3: Seven pillars of information literacy

According to the SCONUL Working Group on Information Literacy (2011), each pillar is further described by a series of statements relating to a set of skills/competencies and a set of attitudes/understandings. Bent and Stubbings (2011:4) opined that it is expected that as a person becomes more information literate he/she will demonstrate more of the attributes in each pillar and so move towards the top of the pillar.

2.9 Constructivist Theory in Adult Learning

Uden & Beaumont (2006:6) posits that learning takes place most effectively when students are actively engaged and learn in the context in which the knowledge is to be used, hence the need for learning theories. According to Opara (2013:1232) four major schools of learning theories that exist and they are behaviorism, Cognitivism, Constructivism and connectivism.

Tonder (2015:53) posits that the constructivist view of learning involves active participation, self-direction and transformation of knowledge. All forms of constructivism understand learning to be an active rather than a passive venture, where learning occurs through dialogue, collaborative learning and cooperative learning.

Constructivism is a very broad concept with many definitions, but most scholars (Maia, Machado & Pacheco 2005 & De Vries 2002:3) who adhere to constructivism agree that this theory is grounded in the research of Piaget and Vygotsky (developmental psychologists), Bartlett and Bruner as well as the educational philosophy of John Dewey. Constructivist learning environments can offer students the kinds of learning experiences that will foster the development of critical thinking skills, possibly leading to higher levels of overall achievement (Allen 2008:23).

A constructivist approach to teaching and learning holds that the learner, through interaction and experience with an object or process, creates knowledge. Instruction based upon constructivist theory places the student at the centre of the learning environment, while the instructor serves as a guide or facilitator. Constructivist theory has enjoyed a certain level of popularity in higher education as emphasis has shifted from a pedagogical framework to a more andragogic (adult and learner centred rather than instructor-lead) one (Allen 2008: 21).

According to Fleury (1998:157), constructivism is comprised of a range of ideas about the production of knowledge and its construction by groups or individuals. Constructivism is a theory according to which each person builds knowledge from the inside, through his/her mental activity (Brewer & Daane, 2003:417), and constructivism is a philosophy of learning founded on the premise that by reflecting on our experiences, we construct our own understanding of the world we live in. Each of us generates our own 'rules and mental models' which we use to make sense of our experiences (Watson, 2000:135).

According to Anderman and Anderman (2009), constructivist learning theory recognises learning as both a social and reflective process and andragogy manifests constructive learning theory through its precepts that adults be involved in their own instruction. Constructivists understand that people create meaning through the interactions of prior experiences, knowledge and introduction to new material. The diagram in figure 3.3 shows how adult learning theory is compatible with a constructivist methodology for teaching adults.

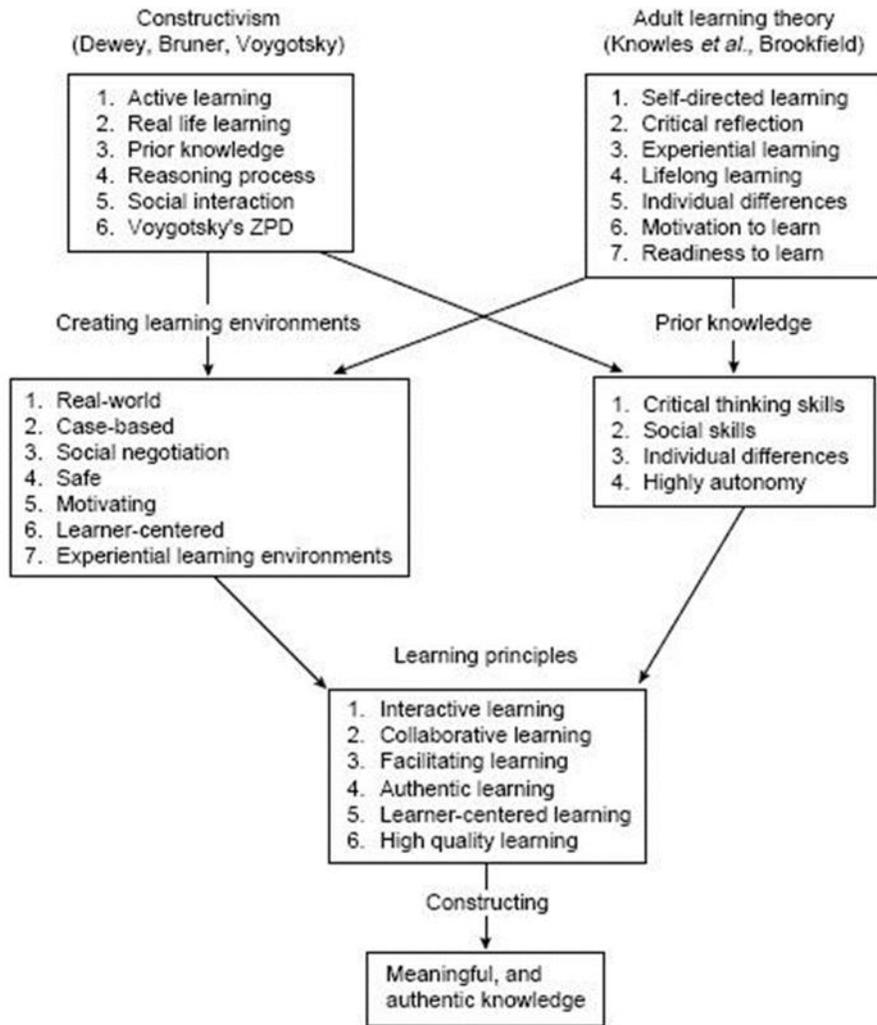


Figure 2.4: Constructivism applied in adult learning (Huang 2002:37)

The same techniques used to engage these group of students are similar to ones to engage online or distance learners (Rossman 2000); after all, more and more adults are turning to online education for their degrees. Best practices for online learning environments include making lessons highly relevant to the students' work or education goals, establishing opportunities for both collaboration and reflection (Tsai 2013), and engaging students through problem-based exercises (Cheaney & Ingebritsen 2005).

Cooke (2010) argued that creating an adult-centred learning environment during library instruction sessions can reduce the amount of library- and technology-related stress many adult learners experience. When applying constructivist principals to adult education it is critical to provide an

experience that the student feels will be useful to them in their work or in their life in general. The motivation for an adult to learn comes from a social, emotional or occupational need.

2.9.1 Application of Constructivist Theory in Information Literacy

Learning theories and information literacy standards should be used as the foundation of all information literacy learning design and activities. Lupton (2004:89) emphasised that information literacy cannot be decontextualized from the learning process. The link between information literacy and learning is found in the definition of an information strong correlation between education and IL.

According to Major and Boitumelo (2012), in a constructivist learning environment, learners learn best by discovering their own knowledge. There is a considerable body of literature (Chism, Douglas & Hilson 2008:3; Crotty 2003:57; Prawat & Floden 1994:37; Larochelle & Bednarz 1998:3; Riesbeck 1996:49; Jonassen, Myers & McKillop 1996:94; Morrison & Collins 1996:107 and Jonassen 1991:28) that perceives constructivism as a learning theory based on the assumption that knowledge is actively constructed by the learner.

Constructivism is a process by which the learner develops understanding and constructs knowledge through interactions with the environment (Savery & Duffy 1995). According to Allen (2008:29), constructivist theory contends that the learner brings to the learning environment knowledge from past experience, and that knowledge has a strong influence upon how the learner constructs meaning and acquires new knowledge from new experiences.

According to Cooperstein and Kocevar-Weidinger (2004:141), using a modified constructivist approach, carefully planned, structured, directed activities lead students to discover concepts and develop skills. The ACRL standards, to which many academic libraries strive to adhere, appear to support a constructivist-based approach to fulfil the goal of creating lifelong learners who possess the ability to conceptualise, analyse, synthesise, evaluate, and ultimately apply information to everyday problems (Allen 2008:34). Many researchers agreed that a well-planned programme centred on a constructivist framework is effective for the transference of critical thinking and information literacy skills in online learning environments. The constructivist approach allows students to build on their existing information literacy knowledge as they engage with discipline specific learning activities (Webster & Kenny, 2011).

Today, research on pedagogical aspects of information seeking and information literacy research is to a large degree dominated by constructivist approaches (Loertscher & Woolls 2002; Talja, Tuominen & Savolainen 2005; Virkus 2003). Constructivist learning is based on the principle that through activity students discover their own truths and Cooperstein and Kocevar-Weidinger (2004:142) observed that the librarian's job is to facilitate that discovery.

From Jurkowski's (2005:29) viewpoint, there are two ways of perceiving how constructivism can be used to plan library services for distance education students. The first is expressed in terms of information, viewing the library as a cognitive tool, sometimes referred to as 'mind tools'. The second is stated in terms of instruction from an information literacy viewpoint. As Moore and Kearsley (1996) point out, most distance education students are adults. Adults thrive in a constructivist atmosphere. Patrons learn as they independently seek out new information that builds upon what they have already discovered. The library becomes the scaffolding students require to grow in their individual fields.

2.10 Related Studies

Some studies that have been done previously were also looked at to find out similar conclusions that were applicable to the current study. There were previous investigations into the issue of information literacy curriculum, as well as the models of information literacy in higher education and its integration in universities like the National Open University of Nigeria.

This section provides a preview of related literature from various authors that are similar to research issues on information literacy and lifelong learning in open and distance education. Several other studies from different African countries such as Idiodi (2005), Machet (2005) and Obajemu (2002) in Baro, Endouware and Ubogu (2011:311) have been conducted on the need to investigate the absence of information literacy skills by undergraduate students. From another perspective, Issa, Amusan and Dauda (2009), Igwe and Esimokha (2012), Ilogho and Nkiko (2014), observed in their research the absence of information literacy in the curriculum of the majority of schools in Nigeria.

A study was undertaken by Lwehabura and Stilwell (2008) in four Tanzanian universities to investigate the status and practice of information literacy so as to determine the best ways of introducing or improving IL programmes. This article reported on the findings related to

challenges and opportunities that could influence the effective implementation and introduction of IL programmes in Tanzanian universities. Also Ali Al-Aufi Sultan and Hamed Al-Azri (2013) surveyed undergraduate students of Sultan Qaboos University, enrolled in their final year for the academic year 2010/2011.

Weiner (2010) reflected on the lack of information literacy skills developed over the educational life of most students. In similarity with the present study on information literacy skills of undergraduate students, Ali (2010) investigated the sufficiency of information literacy skills among the students of the University of Omar Al-Mukhtar in Libya. In Kuwait, Al-Hamoud (2010) conducted a study aiming to determine the level of information literacy among students and faculty members of the Basic Education College. The researcher utilised both questionnaires and interviews. In another study conducted by Ferguson, Neely and Sullivan (2006) at the University of Maryland, in Baltimore, a questionnaire was used to determine the availability of information literacy skills among bio-sciences students. The major finding pointed to insufficient skills in information literacy and a lack of knowledge of tools and strategies pertaining to searching for information, using citation tools, and evaluating information. The study helped researchers develop an information literacy programme for the university.

Al-Ghamdi (2009) attempted to investigate information literacy among university students in Saudi Arabia using a questionnaire. The majority of the respondents indicated weaknesses in their use of information. Studies in IL in the past few years have advanced to include recommendations for the kind of skills and competencies that are of strategic value to the management and use of information within knowledge organisations (Aharony 2010: 262-263; Bruce 2000:93).

A study that is similarly related to this study that was carried out by Igwe and Ndubuisi-Okoh (2014) to find out the level of information literacy awareness, perception and skills of students of the National Open University of Nigeria (NOUN). The survey research method was adopted involving 197 respondents who were found during visits to the four study centres for data collection. A questionnaire was used for data collection, which was administered, properly filled, returned, and used for data analysis with descriptive statistics. It was based on the fact that an IL instruction course is missing in the curriculum of NOUN. This study was not explicit enough as it didn't have a total coverage of a larger population of the students of the National Open University of Nigeria and also the stakeholders in the University such as the professional librarians and the

deans of the schools where the programmes are domiciled were not part of the respondents of the study, hence the information gained during that study wasn't holistic as is with the present study.

Researchers have revealed a strong argument in favour of integrating information literacy training into the curricula at universities (Hart & Davids, 2010; Lwehabura, 2008; Tiemensma, 2012). One of the findings of research on IL education at tertiary level highlighted the need for collaboration and partnerships between librarians and faculties as a key issue (Hart & Davids, 2010; Lawal, Underwood, Lwehabura & Stillwell 2010).

Studies conducted by other academic librarians have proved that appropriate information literacy interventions contributed to better student performance (Daly, 2010; Sacchanand, 2002). According to Mkeni-Saurombe (2015), librarians in open distance education institutions needed to adapt their information literacy training practice to suit their clients' needs in a progressive open and distance environment.

2.11 Summary

In this chapter, a concept map of literature was created for purposes of organising the resources in a meaningful manner. The map was followed stage by stage as a guide to bring together the concepts of information literacy and lifelong learning.

In today's information-exploded world, students need to develop their critical thinking and lifelong learning skills to be able to access and evaluate information. They need to learn how to learn. The information literacy teaching focus in higher education needs to shift from recommending resources to critically selecting and evaluating resources; from how to use a particular database or a product to how to understand database process; from specific skills to general, transferable critical thinking and lifelong learning skills (Wang 2007:150). Critical thinking and information literacy have a common objective: the ability to locate relevant research material and then to evaluate and make informed judgments regarding its use. Universities and their respective libraries have often formed a partnership to foster critical thinking and information literacy within their student bodies (Johnson 2007:103).

According to Knowles, Holton, and Swanson (2012:301), technology in adult education fosters lifelong learning as it provides for consistency of content delivery, the ability to provide training

in remote settings, eliminates travelling costs, enables tracking of learner progress, administers standardised testing, renders learner flexibility in regulating and pacing learning, provides for diverse learning needs and advanced opportunities for practice through simulation, ensures greater retention and reduces instructional time. The application of information technology in library and information instruction is a necessity to be considered. According to Merriam and Caffarella (2007:105), the primary goal of institutions is to enable learners to be lifelong and self-directed learners. This can be achieved through the constructivist approach in terms of integrating information literacy in the instruction procedures of university libraries.

CHAPTER THREE

RESEARCH METHODOLOGY

3.0 Introduction

According to McMillan (2012:5), research is a “systematic process of gathering and analysing information and educational research is systematic, disciplined inquiry applied to educational problems and questions”. Research has also been defined as the collection of data, in a logical way, in order to explore, describe or explain things, to find, generalize, correct or create knowledge, solve problems and answer questions (Eldredge 2004:83; Rugg & Petre 2007:61; Vogt 2007:5).

Bushaway (2003:161) is of the opinion that research is the process of undertaking or carrying out original investigation in all its forms: analysis, innovation, experiment, observation, intellectual enquiry, survey, scholarship, creativity, measurement, development, hypothesis, modelling and evaluating with a view to generating new knowledge or novel comprehension. In the same vein Atkins and Wallace (2012:20) explained that research is systematic because it is carefully planned and carried out. With different perspective on the definition of research, Mertens (2005:2) opined that it has been suggested, however, that the "exact nature of the definition of research is influenced by the researcher's theoretical framework".

There are basically two types of research, the basic research and the applied research. According to Powell and Connaway (2004:53), basic research tends to be theoretical in nature and concerns itself primarily with theory construction, hypothesis testing, and producing new, generalizable knowledge. Applied research is more practical in nature than basic research. Applied research “strives to improve our understanding of a problem, with the intent of contributing to the solution of that problem” (Bickman & Rog 2009:x). Applied research often generates new knowledge and contributes to theory, but its primary focus is on collecting and generating data to further our understanding of real-world problems.

Curry (2005:6) observed that practicing information professionals routinely investigate problems within their libraries, but rarely do they have the time to organise a rigorous and sustained inquiry and analysis into the problem at hand. This study was a mix of both basic and applied research because it investigated, generated new knowledge on the concept of information literacy and lifelong learning and provided a practical solution on its acceptability for students in higher education.

This chapter presents the theoretical perspective to this study, the procedures involved in carrying out this study were: the research design, study area, target population, sample size, sampling procedures and techniques, instrument for data collection, validity and reliability of the instrument, procedure for data collection, data analysis and presentation, research evaluation and, lastly, the ethical consideration and summary of the chapter.

3.1 Theoretical Perspectives

This section provides the worldviews or paradigms that relate to the research process and research design. According to Given (2013) and Ngulube (2015) many researchers have difficulty in identifying the conceptual differences between epistemology, ontology, paradigm, methodology, research approaches, techniques and other core concepts in research methods. The purpose of this theoretical background is to clarify issues of using concepts in research methodology.

Sarantakos (2013) reported that “ontological, epistemological and methodological prescriptions of social research are ‘packaged’ in paradigms which guide everyday research”. In a bid to make things clearer philosophically, researchers made claims about what is knowledge (ontology), how we know it (epistemology), what values go into it (axiology), how we write about it (rhetoric), and the processes for studying it (methodology). Creswell (2014) referred to these philosophical assumptions as worldviews. Mouton (2011) stated that worldviews were the basic beliefs and principles that guided the researcher’s actions. Yin (2014) claimed that worldviews influenced the research strategies, research design, and research methods for all research projects.

Ontology is a set of beliefs about what exists or what is real (Kim 2010:5). This author further described epistemology as a set of beliefs about knowing and explaining that methodology involves the interviewing and observing of the participants in their natural setting in order to capture the reconstructions participants use to make meaning of their world. Ngulube (2015)

expressed diagrammatically the different typologies about the research knowledge claims and their breakdown as shown below:

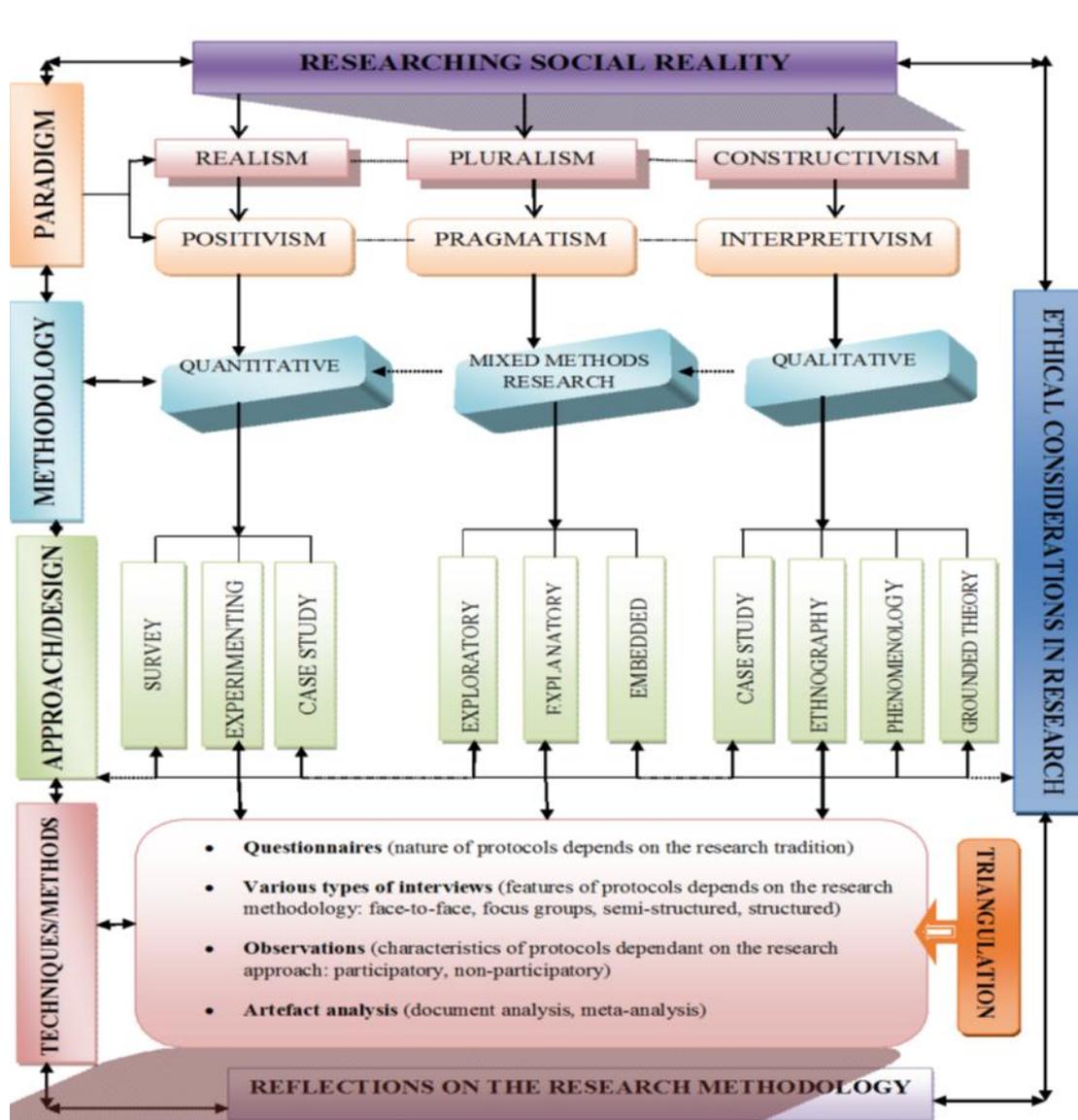


Figure 3.1: Mapping the research methodology discourse (Ngulube 2015:128)

Knowledge that is generated in the interpretivist paradigm is subjective while, epistemologically, positivists generate objective knowledge that is 'out there'. Pragmatism or methodological pluralism was born out of an attempt to bridge the gap between interpretivist and positivist epistemologies (Ngulube, 2015:127).

3.2 Paradigms

Polit and Beck (2012:11) defined a paradigm as a worldview, a general perspective on the complexities of the world. Mertens (2005:7) posited that a paradigm is a way of looking at the world and is composed of certain philosophical assumptions that guide and direct thinking and action. Neuman (2006:81) referred to a research paradigm as "a general organizing framework for theory and research that includes basic assumptions, key issues, models of quality research, and methods for seeking answers". According to Denzin and Lincoln (2008:22) a paradigm is referred to as "the net that contains the researcher's epistemological, ontological, and methodological premises". A paradigm helps the researcher to be organized in thinking, observing and interpreting a process. It is a way of looking a set of philosophical assumptions and guides one's approach to enquiry (Brink, Van der Walt & Rensburg 2012:25).

Mackenzie and Knipe (2006) classified variable theoretical paradigms as positivist (post-positivist), constructivist, interpretivist, transformative, emancipatory, critical, pragmatism and de-constructivist, post positivist or interpretivist. According to (Creswell 2003:8), the interpretivist/constructivist researcher tends to rely upon the "participants' views of the situation being studied" and recognizes the impact on the research of their own background and experiences. Interpretivist/constructivist approaches to research have the intention of understanding "the world of human experience" (Cohen & Manion 1994:36), suggesting that "reality is socially constructed" (Mertens 2005:12).

Table 3.1: Research paradigms (Adapted from Creswell & Plano Clark (2011:42))

Research paradigm	Ontology	Epistemology	Methodology
Quantitative (Positivist)	Stable external reality functions according to specific laws that can be studied. Singular reality: hypotheses are accepted or rejected.	Researchers are objective and removed from the research context. Researchers objectively collect data on instruments.	Experimental and quasi-experimental designs. Hypothesis testing. Deductive reasoning: a priori thesis is tested (top-down approach).
Qualitative (Interpretative)	Subjective experiences and reality. Socially constructed, thus multiple realities.	Researchers are empathetic and subjectively involved. Researchers visit participants at their sites/natural settings to collect data.	Social interaction as the basis of knowledge Interpretative. Inductive reasoning: researchers start with participants' views and build up to patterns and theories (bottom-up approach).
Mixed methods	Pragmatic: Both singular and multiple realities are embraced.	Researchers embrace both objective (quantitative) and subjective (qualitative) realities in order to address the research question. Emphasis is on collecting data that addresses the research question.	Both quantitative and qualitative methodologies are adopted and integrated (mixed).

In the classification of these paradigms, researchers believe that the interpretivist/constructivist paradigm predominantly uses qualitative methods (Glesne & Peshkin 1992; Silverman, 2000; McQueen, 2002; Thomas, 2003; Willis, 2007; Nind & Todd 2011) whilst the positivist and post positivist research is most commonly aligned with quantitative methods of data collection and analysis (Mackenzie & Knipe 2006:np). The positivist paradigm arose from the philosophy identified as logical positivism and is based on rigid rules of logic and measurement, truth, absolute principles and prediction (Halcomb & Andrew 2005; Cole 2006; Weaver & Olson 2006).

Johnson, Onwuegbuzie and Turner (2007:112) observed that pragmatism is “increasingly articulated and recognised as the third major research approach or research paradigm”. Authors such as Feilzer (2010), Johnson and Onwuegbuzie (2004); Maxcy (2003), Morgan (2007), Teddlie and Tashakkori (2003), Bazeley (2003); Greene & Caracelli (1997 & 2003) indicated that out of the types of research paradigms, pragmatism has been identified with the mixed methods philosophy. The pragmatic paradigm is oriented “toward solving practical problems in the ‘real world’ rather than on assumptions about the nature of knowledge” (Feilzer, 2010:8). Pragmatism or methodological pluralism was born out of an attempt to bridge the gap between interpretivist and positivist epistemologies (Ngulube 2015:127).

Qualitative researchers study things in their natural settings, attempting to make sense of, or interpret, phenomena in terms of the meaning people bring to them (Flick 2007:12; Polit & Beck 2012:14; Creswell 2013:43).

3.3 Research Methodology

According to Silverman (2013:113), a methodology refers to the choices we make about cases to study, methods of data gathering, and forms of data analysis in planning and executing a research study. A methodology defines how one will go about studying any phenomenon. Research methodology refers to a technique and process utilised by the researcher to structure a study in a logistical, relational and ethical manner (Bloomberg & Volpe 2012:108), and to gather and analyse information in a systematic manner (Polit & Beck 2012:741).

Ngulube (2015:127) explains that methodology is central to the research process because it is the lens through which a researcher looks when making decisions on acquiring knowledge about social

phenomenon and getting answers to the research questions. He added that it specifies the types of research designs and research methods that may be employed to gain knowledge about a phenomenon. The choice of a research methodology is determined by the “underlying theoretical paradigm” (Sarantakos 2013), the purpose of the research, and the research question (Ngulube 2015:12). There are three broad research methodologies, namely quantitative, qualitative, and mixed methods research.

3.3.1 Quantitative Methodology

Quantitative research is a means for testing objective theories by examining the relationships among variables (Polit & Hungler 2013; Moxham 2012). Matthews and Ross (2010:478) view quantitative research methods as primarily concerned with gathering and working with data that is structured and can be presented numerically. Silverman (2010:13) noted that the quantitative research approach obtains data which is statistically relevant and is usually used to answer questions such as how many, where from and how much, amongst other questions.

According to Stangor (2011:15), quantitative research is descriptive research that uses more formal measures of beliefs, attitudes, intentions and behaviour, including questionnaires and systematic observation of behaviour that is subjected to statistical analysis. In most cases quantitative research places emphasis on quantification in the collection and analysis of data and the data can be expressed in numbers, percentages, tables (Babbie 2010:35).

Earlier in the chapter it was pointed out that a quantitative approach was the dominant data collection strategy in the study with a small component of the overall study being drawn from the qualitative paradigm. The dominant quantitative approach was used in the study to test the information literacy and lifelong learning skills of the students in the National Open University whilst the qualitative approach was used to collect data needed to clarify areas that were not adequately covered in the quantitative data collection phase.

3.3.2 Qualitative Methodology

Qualitative research is defined by Jwan and Ong’ondo (2011:3) as an approach to enquiry that emphasises a naturalistic search for relativity in meaning, multiplicity to interpretations, particularity, detail and flexibility in studying a phenomenon or the aspect(s) of it that a researcher chooses to focus on at a given time. In qualitative research, numerical data is not necessarily generated. Ngulube (2005) noted that the qualitative research approach is usually confined to in-

depth studies of small groups or individuals. The qualitative research approach mainly gives answers to the question of ‘why’ and involves collecting data by observing what people say and do. Qualitative techniques gather descriptive type of data while quantitative collects statistical data (Tuli 2006:99).

Creswell (2014:4) described qualitative research as an approach for exploring and understanding the meaning individuals or groups ascribe to a social or human problem. The qualitative research is based on the philosophy of empiricism, follows an unstructured, flexible and open approach to enquiry, aims to describe rather than measure, believes in in-depth understanding and small samples, and explores perceptions and feelings rather than facts and figures (Kumar 2011:394). This study contains an aspect of the qualitative strand.

3.3.3 Mixed Methods Research

Mixed methods research (MMR) is in the realm of multi-paradigms since it employs both the positivist and interpretivist paradigms (Romm & Ngulube 2015). Bazeley (2008:133) reported that mixed methods research is an umbrella term applying to almost any situation where more than one methodological approach is used in combination with another, usually, but not essentially, involving a combination of at least some elements drawn from each of qualitative and quantitative approaches to research. Creswell and Vicki (2011:5) identified core characteristics of mixed methods research. Some of the characteristics are that the researcher:

- Collects and analyses persuasively and rigorously both qualitative and quantitative data (based on research questions)
- Mixes (or integrates or links) the two forms of data concurrently by combining them (or merging them), by having one build on the other sequentially, or by embedding one within the other
- Gives priority to one or to both forms of data (in terms of what the research emphasises)
- Uses these procedures in a single study or in multiple phases of a programme of study
- Frames these procedures within philosophical worldviews and theoretical lenses
- Combines the procedures into specific research designs that direct the plan for conducting the study.

According to Creswell (2014), when using mixed methods, the researcher bases the inquiry on the assumption that collecting data with different approaches best provides an understanding of a research problem. The choice of a mixed method was not made because the research questions of this study were not aligned for use with the mixed methods process.

3.4 Research Design

Polit and Beck (2012) defined a research design as “the researcher’s overall method for answering the research question or testing the research hypothesis”. Terrell (2012:258) described a research design as a road map that determines the most appropriate route to take when carrying out the study. Ngulube (2010) explained that a research design is a programme that guides a researcher in collecting, analysing and interpreting data and giving meaning to it. Burns and Grove (2009:211) observed that designing a study helps researchers to plan and implement the study in a way that will help them obtain the intended results thus increasing the chances of obtaining information that could be associated with the real situation. It refers to all the procedures selected by a researcher for studying a given phenomenon (Burns & Grove 2009:218).

Kothari (2014:29) contended that “a research design is the arrangement of conditions for collection and analysis of data in a manner that aims to combine relevance to the research purpose with economy in procedure”. A research design therefore gives direction and systematises the research study as the choice made affects the outcome of the study and how the findings are concluded (Menjo 2011:69).

The National Open University was chosen as a case study. The researcher made the quantitative strand the dominant part of the case study because the choice of the quantitative approach helped address the research question of the study and because the population of the students is in a wide geographical area.

3.4.1 Case Study

A case study can be defined as a research strategy when the investigation is done within its real life context (Thomas 2011). Kombo and Tromp (2006:72) added that the case study described the unit in sufficient details, in context and holistically. Case study methods are useful for doing research because they help to focus on a smaller number of units than would otherwise be involved

if the whole object were to be measured. The case study design used the logic of replication to replicate the procedures for each person included in the inquiry (Creswell, 2013).

Case studies are also described as 'heuristic' because they "... illuminate the reader's understanding of the phenomenon under study beyond the reader's original knowledge" (Gay, Mills & Airasian 2011:446). This study is a case study with a multiple case design, in which a case study design was appropriate because there was a clearly identifiable case within boundaries and the objective of the study was to come up with in-depth understanding of the case (Creswell 2013; Yin 2014). The National Open University is an institution with different study centres across the country. A case study was appropriate as each centre was considered a single case study to arrive at an in depth understanding of the case.

Creswell (2013:97) stated that a case study can be regarded as an exploration or in-depth analysis of a bounded system of a single or multiple cases over a period of time. This means that within a specific environment or research situation, single or multiple cases over time can be studied to gain information or, in multiple cases, to compare information. According to Yin (2014:16), a case study is an empirical inquiry that investigates a contemporary phenomenon (the case) in depth and within its real-life context, especially when the boundaries between phenomenon and context are not clearly evident. A case study involves an in-depth, intensive and well-focused exploration of such an occurrence. The flexibility and strength of a case study design have seen it being used in both qualitative and quantitative research approaches and have also been applied in many disciplines like sociology, history, education, social anthropology and psychology (Willig 2013:101). This study utilised the case study method of quantitative research with a mix of the qualitative strand in its data collection process.

3.4.2 Purpose of Case-study Research

Newby (2010:52) identified the purpose of a case study as to explain, explore and describe a phenomenon. Farquhar (2012:6) suggested that by using a case study research the researcher gains a particular understanding of or insight into whatever to research is at hand which a contemporary phenomenon is usually. Rule, Davey and Balfour (2011:302) stated that beyond the definition of case study, emphasis is placed more on its characteristics which include its focus on a single instance of a phenomenon, its location and interaction with a particular setting, and its use of multiple sources of evidence.

The purpose of using a case study research is because it is concerned with the investigation of single or multiple units of study, using familiar research methods for data collection such as questionnaires, observations and interviews. According to Farquhar (2012:6), Case studies are empirical investigations in that they are based on knowledge and experience or, more practically speaking, involve the collection and analysis of data. By circumscribing the area of a study to a small number of units, the case study researcher is able to look in depth at a topic of interest or phenomenon. This study used multiple cases to provide more compelling confidence to the findings. A multiple case study was chosen to explore the research questions across six cases, to ascertain patterns, replication, or contradictions of findings in the course of the study.

A case study is believed to consist of different designs. Literature has shown that case study designs can be categorised into a single-case (holistic) designs, single-case (embedded) designs, multiple-case (holistic) designs and multiple-case (embedded) designs (Yin 2009:47; Baxter & Jack 2008:548).

3.4.2.1 Single case study design

According to Kazdin (2011), single-case research design (SCRD) is a type of research that is used to demonstrate experimental control within a single case and rigorously evaluate an intervention with one or a small number of cases. Single-case research designs can demonstrate clear causal relations between intervention and behaviour change with much more efficiency than large-sample designs. The limitation most often cited in discussions of single-case research designs is a lack of generality of obtained effects (Nock 2007:348). Single case study designs are divided into two sub-categories, namely single-holistic designs or single-embedded designs.

Daymon and Holloway (2011:119) suggested that a single case study design provides the researcher with an opportunity to conduct an in-depth exploration of a particular phenomenon. In this situation, the interest of the researcher is on small numbers which are thoroughly examined at a single or delimited point.

3.4.2.2 Multiple case study design

According to Daymon and Holloway (2011:119) the multiple case study design entails the use of two or more cases in order to identify their distinctive features by exploring their similarities and contrast. In support of the above, Leedy and Ormord (2010:137) believed that multiple case studies are useful to researchers in order to make a comparison between cases. Schurink and Auriacombe

(2010:438) added that multiple case studies can be used to capture varieties between cases. By doing this, the multiple case study design allows the researcher to generalise to some extent to a wider universe (Daymon & Holloway 2011:119).

Johnson and Christensen (2011:408) explained that a multiple case is a comparative type of study in which:

- several cases are compared for similarities and differences
- results of multiple cases can be observed to test a theory
- results from multiple cases are more likely to be generalized than form a single case.

Multiple case studies are powerful since they permit replication and extension among individual cases. Replication enables a researcher to perceive the patterns in the cases more easily and to separate out patterns from change occurrences. Different cases can emphasise varying aspects of a phenomenon and enable researchers to develop a fuller theory (Baker 2011:130). The multiple cases approach chosen for this study was selected because the researcher believed that studying and understanding the five cases chosen from the five study centres in the National Open University would give a better understanding of the concept of information literacy in a wider scope, hence building a foundation for the theory of information literacy and lifelong learning in the National Open University of Nigeria.

3.5 Study Area

The study was carried out at the National Open University of Nigeria which is a Federal Open and Distance Learning (ODL) institution, the first of its kind in the West African sub-region. The area is cosmopolitan and students joining the University have different academic backgrounds. From the University's demographic statistics report, the University had a students' enrolment of 390 112 in the 2014/15 academic session. These students are a combination of young students and mature students who are working in different organisations.

The National Open University of Nigeria operates from its administrative headquarters in Abuja, Nigeria, with study centres throughout the country (National Open University of Nigeria - WHED - IAU's World Higher Education Database). The study was conducted in five selected study centres out of the seventy-two centres of the National Open University. The five different study centres

were chosen on the basis of their high numerical strength and the geographical location of the study centres.

3.6 Study Population

According to Babbie (2010:199), a population is the theoretically specified aggregation of study elements and a study population is the aggregation of elements from which a sample is actually selected. The term ‘population’ refers to a large well defined group from which a sample is drawn and which is specified in very concrete terms (Neuman 2000:20). An example of a population can be a large well defined group, an organisation, a written document or symbolic message or even a social action that is being measured.

Maxfield and Babbie (2008:217) described a study population as a specific group which is targeted for research purposes. Gray (2014:688) similarly described a population as the totality of people, organisations, objects, or occurrences from which a sample is drawn. From another perspective, a population is the entire group of persons who are of interest to the researcher and who meet the criteria that the researcher is interested in studying, or a set of individuals having some common characteristics (Babbie & Mouton 2012:173; Brink, Van der Walt & Rensburg 2012:131; Polit & Beck 2012:738).

According to McMillan and Schumacher (2010:489), the population refers to the whole group of individuals from which a sample is drawn and to which results can be generalised. The target population for this study comprised of all the students in the National Open University of Nigeria, the professional librarians in the University and the deans of the schools in the National Open University. It is very obvious that the target population may not be manageable due to its size, location, distribution and other practical issues such as time, money and personnel. For this reason, the target population was scaled down to the accessible or study population within the deans and the professional librarians and the five study centres with the largest population which can be manageable.

3.7 Sampling Methods

Sampling involves selecting a number of elements from the target population to form a sample. Krathwohl (1998:160) defined sampling procedures as ways of selecting a small number of units from a population to enable researchers to make reliable inferences about the nature of the

population. In fact, sampling is key to the effective description of the characteristics of a population (Ngulube 2005:132).

There are three basic types of sampling: probability sampling, non-probability sampling and mixed methods sampling. A probability sample may consist of random, systematic, stratified, quota, cluster, or multi stage sampling (Teddlie & Tashakkori 2008:171). Each member in the population has a greater than zero opportunity to be selected for the sample. Probability sampling enhances the likelihood of accomplishing the objective of selecting elements that accurately represent the total population from which the elements were drawn. The objective is to provide a method for estimating the degree of probable success; it incorporates probability theory which provides the basis of probability of being included.

Non-probability sampling includes methods such as convenience sampling, quota sampling, purposive sampling and network sampling and not every element of the population has an opportunity for selection in the sample (Burns & Grove 2009). The major purpose of sampling in this research was to have a defined population that would give a reliable inference about the population. Teddlie and Tashakkori (2003:712) described mixed methods sampling as a sampling strategy in which both probability and non-probability sampling techniques are used at different levels of a study. For instance, the stratified random sampling technique was used to divide the population into three strata, namely: professional librarians, deans of schools and students.

3.8 Sample Size, Sampling Procedure and Technique

According to Kothari and Garg (2014:147), sampling is a statistical method or process of obtaining a representative population to collect data or information about an entire population by examining only a part of it. From another perspective, Kumar (2011:397-398) observed that sampling is the process of selecting a few respondents (a sample) from a bigger group (population) to become the basis for estimating the prevalence of information of interest to one. The way one selects the required sampling units from a population for identifying your sample is called the sample strategy. Sampling is important because, in almost all cases, it is not practical to study all the members of a population (Johnston & Vanderstoep 2009:26).

Creswell (2014:192) is of the view that the purpose of sampling in qualitative research is to gain an in-depth knowledge about a situation, event or episode or to know as much as possible about different aspects of an individual on the assumption that the individual is typical of the group and will provide an insight into the group. Other writers have in one way or the other confirmed that sampling is the selection of research respondents from the population so that inferences can be made about the population (Barbie 2011:176; Polit & Beck 2012:339). This study employed stratified random sampling with the students in the five study centres and a purposive sampling technique with the deans and professional librarians in the selection of study respondents.

3.8.1 Sample Size

Sample size is the number of subjects or participants recruited and consented to take part in a study (Burns & Grove 2009:721). Krejcie and Morgan (1970:607) identified the sample size as a function of the size of the population of interest, the desired confidence level and the level of precision where a formula may be used to determine the appropriate sample size or a tool used as a guide to minimum sample size. According to Polit and Beck (2006:267), there is no simple equation to determine how large a sample is needed, but quantitative researchers are generally advised to use the largest sample possible. According to Waiyaki (2013), in any research design, sample size plays a crucial role. It enables one to make inferences about the population under study by using sample statistics where population parameters cannot be analysed.

The sample was drawn from a list of all the seventy-two study centres of the National Open University nationwide with the headquarters inclusive. This study utilized the Krejcie and Morgan's (1970) formula, where the sample size of 384 was chosen because the total number of the sampled students' population was 170 830. This was to safeguard the reliability of results since small samples have the likelihood of undermining the reliability of results.

Table 3.2: Sample size of the student population of the National Open University of Nigeria

Names of Selected Centres	No of Students	Percentage of the Total	Sample Size
Lagos, Agidingbi, Ikeja	63,268	37%	142
Central Area, Abuja	36,219	21%	81
Benin City	28,418	17%	65
Port Harcourt	24,279	14%	54
Lagos, Apapa	18,646	11%	42
TOTAL	170,830	100%	384

Table 3.2 above shows research sample of the study centres in the National Open University. The population was drawn from the sampling frame of 170,830 students who were enrolled in the 2014/15 academic session in the five selected study centres that were chosen for this study.

3.8.2 Sampling Procedure

Sampling procedures involve the definition of the sampling techniques, the population, the instrumentation, and the procedures used to obtain the data (Powell & Connaway 2004). According to Kumar (1999) and Leedy and Ormrod (2005), sampling is done to create a small group from a population that is as similar to the larger population as possible. It is a little group that is like the big group because the degree of resemblance and representativeness is very important (Teddlie & Yu 2007). Creswell (2013:154) agrees that purposive sampling is one of the most common sampling methods used to group the participants of a study into the pre-selected criteria.

The researcher used stratified random sampling to select the study samples and the study centres were divided into strata. This was to ensure that all the students had an equal chance of being selected. According to Ani (2013:116), a stratified random sampling is a condition that selection of members of the population for the sample must be done based on the available strata of the population. Ani (2013) posited that the choice of stratified random sampling was relatively most appropriate where the purpose of the research was that each stratum of the population be included in the sample for effective representation of the population.

The researcher used the purposive sampling technique to select the library staff and the deans of schools who are domiciled in the headquarters whose views were relevant to the study and were within the underlying sampled population. The deans of the schools were selected through the use of purposive sampling because of their managerial roles and also being academic heads of the academic programmes in the University. On the other hand, the professional librarians are experts in the field and are considered authorities in the study. Another reason for this decision was because the total population of professional librarians was small in number, manageable and easier to identify.

3.9 Data Collection Procedures and Method

Ngulube (2015) and Creswell (2013) used the term ‘research methods’ to refer to techniques and procedures such as questionnaires, interviews, observation, document analysis and artefact analysis. Kothari (2014:6) defined research methods as “all those methods that are used for conduction of research operations. Some of these include; sampling and sampling procedures, data collection and analysis, interviews and observation and document analysis” among others. This section discussed different methods/techniques that were used to guide the data collection process in the study. These are data collection procedures, methods of data collection, instruments of data collection, validity and reliability of instruments, and pilot study.

3.9.1 Data Collection Procedures

Permission to engage in research at the designated study centres was sought from relevant authorities of the university in addition to the letter of introduction which was collected from the school for ease of data collection and adequate recognition. The researcher sought the permission

and assistance of the study centre directors to distribute the questionnaire to the students in their study centres.

Advance preparation was made towards getting the respondents on the appointed date. Efforts were made to acquaint the respondents with the overall objectives of the study and the need to truthfully respond to each of the questions raised. They were assured of the strict confidentiality of all information supplied. Lastly, the administered instruments were retrieved immediately at an agreed time of collection.

Secondary data was collected from both published and unpublished works relating to information literacy as published by different authors. Primary data (raw data) was collected from questionnaires, interviews and document analysis. Six research assistants were recruited to assist the researcher to carry out the data collection process in the study centres under study.

3.9.2 Data Collection Methods

There are various procedures for collecting data: tests, questionnaires, interviews, classroom observations, diaries and journals (Zohrabi 2013:254). This study used the questionnaire, interview and document analysis as its data collection methods. It was combination of quantitative and qualitative instruments for data collection. According to Ngulube (2005:140), combining research methods in collecting data offers the promise of getting a ‘complete’ picture in a way that a single method cannot achieve. The use of multiple methods of data collection to gather and analyse data about the same phenomenon assisted in eliminating the inherent biases associated with using only one method. The major reason for combining these methods was for the enrichment of the researcher’s interpretation of data.

Research instruments are tools that are used to collect data for a research project. Examples of data collection techniques include questionnaires, interviews, document analysis and observations (Force 1997:143).

3.9.2.1 Questionnaire

Babbie (2010: 256) defined a questionnaire as a document containing questions and other types of items designed to solicit information appropriate for analysis. Kothari (2006:100) explained that a questionnaire consists of a number of questions printed or typed in a definite order on a form or

electronic forms. In consonance with the definition above, Kumar (2011:145) described a questionnaire as a written list of questions to which respondents must provide the answers. In a questionnaire respondents read the questions, interpret what is expected and then write down the answers.

A questionnaire consists of a set of questions for submission to a number of persons or respondents in order to gather data (Onyango 2002:65). Questionnaires are one of the primary sources of obtaining data in any research endeavour. According to Richards & Schmidt (2002:438) when designing a questionnaire, the researcher should ensure that it is “valid, reliable and unambiguous”.

Questionnaires are generally categorized as open-ended or unstructured questionnaires and closed-ended or structured questionnaires (Onyango 2002:65; Babbie 2005:254) or a mixture of closed-ended and open-ended questionnaires. In the case of closed-ended or structured questionnaires, the respondent is asked to select an answer from among a list provided by the researcher. Closed-ended questions are very popular in research because they provide a greater uniformity of responses and are more easily processed than open-ended ones (Babbie 2005:254). Blaxter, Hughes & Tight (2006:170) divided questionnaires into “seven basic question types: quantity or information, category, list or multiple choice, scale, ranking, complex grid or table, and open-ended.”

Newby (2010:326), Rugg and Petre (2007:147), Wisker (2001:148-149) and Best and Kahn (2006:314-320) offered the following advice for the design of a questionnaire, which this study tried to follow:

- Design: The appearance of the instrument should be attractive enough to catch the respondents’ interest and attention;
- Ease of use: The questionnaire should look and be easy to complete;
- Numbering: All questions and pages should be numbered so as to give a sense of order;
- Format: A uniform format or consistent scale should be used, for example, the answer section should be standardised, with the area for answers being in the same place for all questions, so as to avoid distracting the respondents from the questions;
- Question layout: Questions should be logically placed. The simpler and more easily answered questions should be at the beginning, so as to encourage respondents to start

completing the questionnaire, and also the most important questions should not be right at the end of the questionnaire, as they require the respondent's full attention;

- Instructions: Brief but clear instructions should be included in the questionnaire, for example at the beginning, for clarification; and
- Length: Researchers should keep in mind that the shorter the questionnaire, the more likely it is to be completed.

According to Sekaran (2003:251) and Kothari (2006:100-101), the main reason for using a questionnaire as the main research instrument is because it is advantageous in terms of speed and the volume of data collected, it saves money, it is flexible, it has the ability to collect accurate data, it is easy to distribute to the research population and it is also able to guard respondents in terms of confidentiality and respondent acceptability.

Questionnaire Design and Administration

Two questionnaires were drafted for the purpose of this study. One was designed for the students of the National Open University of Nigeria while the other questionnaire was designed for the professional librarians in the university library in the headquarters and in other study centres. A covering letter which stated the reason for the study was attached to the questionnaire. The letter included contact details of the researcher as well as an assurance of the confidentiality of their information and stressed the need for the participants to return the completed questionnaires to the researcher through the research assistants. The questionnaires were administered by the researcher with the help of the research assistants and librarians in the different study centres. The questionnaires were developed and administered in English in a pre-test phase; the final questionnaire was also in English.

The questionnaire was sent to students via hand delivery and the students were given some time to complete them after which they returned the questionnaires to the research assistants. The questionnaires were administered to the students during their contact period to ascertain their level of information literacy skills. The questionnaire comprised seven main sections (A, B, C, D, E, and F).

- Section A comprised seven items and it focused on respondents' sociodemographic information.

- The nineteen questions in section B investigated types and forms of library instruction.
- Section C comprised nineteen items which focused on the extent of use of types and forms of instructional materials in the library.
- Section D consisted of three questions on resources and facilities in relation to information literacy skills development and nineteen questions on adequacy of information resources and facilities.
- Section E was comprised of eleven items which evaluated students' level of awareness of information literacy programmes in the University.
- Section F had a total of twenty items which assessed the competency level of information literacy among the students of the National Open University of Nigeria.
- Section G comprised 14 items and the questions assessed level of information literacy development.

The second questionnaire designed for the professional librarians had similar sections and divisions as the questionnaire for the students but it focused on finding out more information from the librarians on the students, the availability of information literacy instruction, and extent of use and the level of information literacy development in the university library. Part of the questionnaire items designed for the professional librarians was to determine and evaluate the information literacy education available to the students. Like the first questionnaire, the research assistants administered the questionnaires to the professional librarian and collected them back almost immediately.

3.9.2.2 Interview

The interview is a method of data collection in which an interviewer obtains responses from a participant on a face-to-face encounter or through a telephonic or electronic means (Brink, Van der Walt, & Rensburg 2012:157; Polit & Beck 2012:731). Interviews also have an added advantage that the researcher can ask follow-through questions to extract more insightful information (Caravello 2011).

Matthews and Ross (2010:219) described an interview as a particular type of conversation between two or more people. Interviews are used to find out more by asking questions in a wide range of contexts, for example, social researchers would use interviews to find out more about what people

think, feel or experience. Liamputtong (2013:51) observed that interviews in social research can be seen as special conversations and Flick (2006:160) added that the purpose of interviews “is to reveal existing knowledge in a way that can be expressed in the form of answers and so become accessible to interpretation”. Johnson & Turner (2003:308) listed the strengths of the interview procedure as follows:

- Good for measuring attitudes and most other content of interest.
- Allow probing by the interview.
- Can provide in-depth information.
- Allow good interpretative validity.
- Very quick turnaround for telephone interviews.
- Moderately high measurement validity for well-constructed and well-tested interview protocols.

According to Opdenakker (2006), data collection through interviews can be done in several ways, of which face-to-face interviews are the most common. Besides face-to-face (FtF) interviews, interviewing by telephone is popular too. The process of also interviewing using the internet is rising. CMC (computer mediated communication) is a process where messages are electronically transferred from a sender to one or more recipient(s), both in synchronous (in real time) and in asynchronous (independent from time and place) setting. This study employed the face-to-face method of interview to reach out to its participants.

One method of getting people to express their views is the non-scheduled interview, which consists of asking participants to comment on broadly defined issues. The interviewees are free to expand on the topic as they see fit, to focus on particular aspects, to relate their own experiences, and so on (Bless & Higson-Smith 2000:104-105).

The face-to-face type of interview was used to obtain data from the deans of the schools. The researcher made formal appointments with the deans of the different schools in the University. Semi-structured interviews with the deans of the different schools were conducted to evaluate the available types of information literacy in their respective schools. Most of the questions included

in the interview schedule were of an open-ended nature which was designed to permit free responses from the respondents rather than ones limited to specific alternatives. In the study, another advantage of the FtF interview was that it gave the interviewer a lot of possibilities to create a good interview ambience during the data collection phase.

The interview schedule assessed each of the five specific objectives of the study. A total of twenty to twenty-five (20-25) minutes was spent with each of the interviewees. The interview was conducted on availability of information resources for information literacy, information literacy programmes, level of collaboration, challenges associated with information literacy education and recommendations and best practices for information literacy for lifelong learning. The interview sessions were recorded with the use of a voice recorder and at the same time the researcher took notes of relevant comments made during the interview. The researcher also kept a journal of the interview process.

3.9.2.3 Document Analysis

McMillan and Schumacher (2006:356) described document analysis as a non-interactive strategy that involves little or no reciprocity between the researcher and the participants. This entails the analysis of personal documents, official documents and objects. Documentary analysis is another source of data collection that can supplement the use of questionnaires, interviews and observations. Several authors have described the term 'document' in several ways. Mogalakwe (2006:223) reported that documents range from public through private to personal documents, whilst Bailey (1994:194) explained that there are two types of documents that are used in documentary study, namely primary documents and secondary documents.

According to Berg (2009:338), document analysis is "a careful, detailed, systematic examination and interpretation of a particular body of material in an effort to identify patterns, themes and meaning". Typically document analysis is performed on various forms of human communication, which includes various permutations of written documents, photographs, motion pictures or videotapes, and audiotapes.

Documentary review or analysis refers to the study of documents that details procedures, policies, acts and standards as requirements for proper functioning of an organisation. Payne and Payne (2004) described the documentary method as the techniques used to categorise, investigate,

interpret and identify the limitations of physical sources, most commonly written documents, whether in the private or public domain.

In this study, document analysis gave the researcher an insight into the existing activities of the University which may be geared towards the introduction or implementation of information literacy for lifelong learning amongst student in the National Open University of Nigeria. Documentary analysis was meant to complement answering research questions numbers 1, 2, 3 and 5 as outlined in section the research questions in chapter one.

Some of the documents that were reviewed and studied were:

- Orientation/training manual
- Annual reports
- University website/library website
- University library/school library attendance register
- University Annual Reports and 2012-2017 strategic plan
- National Open University Courseware (Good Study Guide)
- The University's copyright act

The use of institutional documents as part of the information gathering was important because they gave insight into the information obtained from the respondents in the questionnaire and interviews and complemented the information gained from the process of data collection.

3.10 Pretesting the Questionnaire

In order to test the efficiency and effectiveness of the research instruments, the pre-test was conducted using students during the 2014/2015 session in McCarthy Study Centre in Lagos. The population involved with the pre-test had the same characteristics as the target population for the main study in that they were undergraduate students of the University. The pre-test group provided feedback on the instruments design, clarity of questions, the order of the questions, and the ease with which instructions can be understood and followed. The pre-test was conducted to establish the reliability of the questions. As a result of this questionnaire administration procedure, a 100% response rate was achieved. The results of the pre-test enabled the researcher to fine-tune and

improve on the quality of the research instruments before they were employed on the bigger chosen sample of the population.

According to Lancaster, Dodd and Williamson (2004), the testing of data collection tools gave the researcher confidence in their methods that could and did ultimately improve data outcomes in the subsequent studies. It is far better to be sure right at the outset whether the study is worth spending time, resources and energy on before discovering later that all this was a waste (Kraemer et.al 2006:484.).

3.11 Validity and Reliability of the Instruments

According to Leedy and Ormrod (2005:27) reliability and validity of a research instrument have an impact on the extent to which researchers are able to learn from and generalise about the issues they have investigated in the course of their research. It is very necessary to ensure the reliability and validity of a research instrument. Kerlinger and Lee (2000:641) argued that if one does not know the reliability and validity of one's data, little faith can be put in the results obtained and the conclusions drawn from the results of the research. The most important issue in the research is to ensure reliability and validity.

3.11.1 Validity of the Instruments

Mynhardt (2011:14) observed that validity of an instrument is the extent to which an instrument measures what it is supposed to measure. Kumar (2011:184) explained that validity in the broader sense refers to the ability of a research instrument to demonstrate that it is finding out what it is designed for. According to Kimberlin and Winterstein (2008:2278) validity is often defined as the extent to which an instrument measures what it purports to measure. Validity requires that an instrument is reliable, but an instrument can be reliable without being valid. Ruland, Bakken and Roislien (2008:np) posited that the main methods to assess the validity of a test for a group of people under certain circumstances are content validity, criterion-related validity, and construct validity.

In order to ensure the validity of the research instrument, face and content validity was ensured. Face validity was jointly ensured by the researcher and the research assistants in the field through a thorough distribution of the instruments and monitoring of the administration process. A pre-test study was being carried out among 20 students in McCarthy Study Centre other than the one

chosen for the study to further enrich the content of the instrument. Internal validity is concerned with the congruence of the research findings with the reality. It deals with the degree to which the researcher observes and measures what is supposed to be measured. Generally, researchers use different instruments to collect data. Therefore, the quality of these instruments is critical because “the conclusions researchers draw are based on the information they obtain using these instruments” (Fraenkel & Wallen 2003:158). Thus, it is imperative that the data and the instruments be validated.

3.11.2 Reliability of the Instrument

Hair et al. (2006:3) explained that reliability generally refers to the extent to which a variable or set of variables is consistent in what it is intended to measure. When multiple measurements are taken, the reliable measures will all be consistent in their values. Lack of reliability refers to random or chance error. Reliability according to Bryman (2008:149) is referred to as “the consistency of a measurement of a concept”. Silverman (2005:210) defined reliability as “the degree of consistency with which instances are assigned to the same category by different observers or different occasions”.

The test of reliability is another important test of sound measurement. A measuring instrument is reliable if it provides consistent results. The reliability of the instruments was established by conducting a pilot study at the McCarthy Study Centre of NOUN. The reliability coefficient of the questionnaire was determined using the split-half technique. Pearson’s Product Moment Correlation (PPMC) was used and the analysis tested at 0.05 significant level to determine the reliability coefficient of the questionnaires.

3.11.3 Triangulation

According to Creswell and Vicki (2011), triangulation is a qualitative validation technique in which the researcher builds evidence for a code or theme from several sources or individuals. Triangulation is a process of using multiple perspectives to refine and clarify the findings of the research (Eriksson & Kovalainen 2008:292). The idea of triangulating data within a research study is to use multiple observers, theoretical perspectives, sources of data and methodologies and techniques (Eriksson & Kovalainen 2008:310). Triangulation allows researchers to thoroughly deal with aspects of a phenomenon and increase the amount of research data collected (Sarantakos 2013). Kothari (2004:420) recommended the use of more than one data collection method when

carrying out a research project. Triangulation in its various forms has also been considered useful in improving the reliability of a study (Lillis 2006).

Cohen, Manion and Morrison (2007) outlined six different types of triangulation:

- Time triangulation employs cross-sectional and longitudinal designs.
- Space triangulation uses comparative or cross-cultural approaches instead of researching one culture.
- Combined levels of triangulation involve more than one level of analysis (individual level, group level and organisational level).
- Theoretical triangulation uses multiple theories to explain research findings.
- Investigator triangulation utilises more than one observer independent of the other.
- Methodological triangulation entails multiple methods.

In this study, quantitative responses were validated against the responses from the qualitative inquiry. It is one of the ways of enhancing rigor and trustworthiness in qualitative studies, and the validity and reliability of quantitative studies. A common practice for establishing validity is triangulation with the aim to achieve greater confidence in the final research findings (Eriksson & Kovalainen 2008:292-310).

3.12 Data Analysis and Statistical Presentation

Data analysis involves summarising the data and interpreting its meaning in a way that provides clear answers to questions that initiated the study (Fox, Murray & Warm 2003:178). Mugenda and Mugenda (2003:203) defined data analysis as the process of bringing order, structure and meaning to the mass of information collected. The purpose of a data analysis is to organise, provide structure to and elicit meaning from data (Brink, Van der Walt, & Rensburg 2012:193; Polit & Beck 2012:556).

According to Creswell (2013:180) data analysis in qualitative research consists of preparing and organising the data for analysis, then reducing the data into themes through a process of coding and condensing the codes, and finally representing the data in figures, tables or a discussion. Fraenkel, Wallen and Hyun (2012:431) observed that data analysis in qualitative research relies

heavily on description, a coherent description of what the researcher observed or discovered. Even when statistics such as percentages are calculated, they tend to be used in a descriptive rather than in an inferential sense. Gray (2014:602-607) described the qualitative data analysis as a rigorous and logical process through which data is given meaning. The analysis of the data can lead to an initial description of the data, through a process of disaggregating the data into smaller parts, connecting the new concepts and providing the basis for a fresh description. He added that merely describing the data is not enough; there is a need to interpret, to understand and to explain the data.

In the analysis of the qualitative data collected in this study, the interview process followed the standard process of description. It started with the researcher thoroughly reviewing the transcribed interviews, open-ended question responses and journal notes of the researcher to gain an initial understanding of the responses (Lee 2012). The next step entailed organising and coding the data, while extracting key words and meaningful statements (Caravello 2011) and the third step was the process of clustering of themes and meanings from the data (Yin 2014). The fourth step was the formulation of preliminary interpretations by the researcher (Lee 2012).

In quantitative research the main emphasis in data analysis is to decide how one is going to analyse the information obtained in response to each question that was asked (Kumar 2011:255). From the quantitative perspective of the study, data analysis involved the use of simple frequency and percentage distribution, mean, median and standard deviation. The descriptive statistics was generated on all the variables in the instrument while inferential statistics such as correlation and regression analysis was carried out on the relationship between information literacy and lifelong learning. This was accomplished with the aid of a computer software known as statistical package for social sciences (SPSS) version 20.

3.13 Ethical Considerations

Fox and Bayat (2012:148) stated that “ethics in research involves getting the informed consent of those who were going to be interviewed, questioned, observed or from whom materials are taken”. According to Powell & Connaway (2004:69), many professional associations have guidelines for ethical research. A number of other standard textbooks (Cresswell 2014, Creswell 2013, Gray 2014, Westbrook 2001) on research methods in the social and behavioural sciences devoted space to ethics in research. Creswell (2014:92) emphasised that ethical issues in research command

increased attention today. The ethical considerations that need to be anticipated are extensive, and they are reflected throughout the research process.

Gray (2014:68) categorised ethical considerations into the following four main areas:

- Avoiding harm to participants
- Ensuring informed consent of participants
- Respecting the privacy of participants
- Avoiding the use of deception

In the UNISA Policy of Research Ethics (2012:9), it is clearly stated that UNISA promotes the following four internationally recognised moral principles of ethics as bases for research:

- autonomy (research should respect the autonomy, rights and dignity of research participants)
- beneficence (research should make a positive contribution towards the welfare of people)
- nonmaleficence (research should not cause harm to the research participant(s) in particular or to people in general)
- justice (the benefits and risks of research should be fairly distributed among people)

These principles are not ranked in any order of preference. In disputes a balance between the four principles should be pursued.

On the analysis of community information needs, Westbrook (2001:47) incorporated guidelines for ethical practices as appropriate. These guidelines stressed that anonymity, or confidentiality, of everyone must be maintained, that library services should never appear to depend on patron participation in the study and no harm should come to any subject. The conduct of research should be honest, fair and transparent. Researchers should be honest about their own limitations, competence, belief systems, values and needs. The contribution of other researchers or members of the research team should be properly acknowledged. Researchers should not abuse their positions or knowledge for personal power or gain (UNISA Policy of Research Ethics 2012:10). In line with Creswell (2013), the researcher ensured that transparent, honest and fair means were used to gain respondents' feedback and the research did not expose anyone to harm or danger by participating in the research.

The principles and ethical issues surrounding data collection, analysis and interpretation were strictly adhered to with a view to enhancing the outcome of the study. Participants were treated with respect from the time they came into contact with the researcher up to the data collection, analysis and dissemination of the findings. The researcher and the research assistants were ethical at every stage of the research.

3.14 Evaluation of the Research Methodology

According to Ngulube (2005:139) “research methods need to be evaluated in order to explain what information was required, how it was collected accurately and how it was analyzed”. The essence of this section was to reflect on the research approach, methods and procedures as applied in this study. The researcher took careful steps in investigating the processes involved in designing and executing the study.

Writers such as George and Bennet (2005), Gerring (2004), Iyvbjerg (2006); have different views about the use of case studies for research purposes. Some criticize case study research because they believe that the small sample size and lack of controls undermine the ability to generalise, while others worry that the analysis of case study data is often unsystematic. Yet case studies, because they detail specific experiences in particular contexts, offer the opportunity to learn more about organisational process relationships and bring context to the success or failure of quality improvement efforts (Baker 2011).

From the discussion in various researches, case study researchers have been shown to be part of both the positivist and the interpretivist paradigms. Case study researchers have been shown to apply both quantitative and qualitative methods (Lapan, Quartaroli & Riemer 2012:256; Meyer 2001:336). Despite the fact that the case study is mostly regarded as a qualitative approach, Jwan and Ong’ondo (2011:31) and Neuman (2006:41) observed that a case study can also be used in quantitative research. This study was a typical example of a case study that utilised both the quantitative and qualitative methods in its research process. The strength of this case study was to develop a rich explanation for the complex pattern of outcomes and compare the explanation with the outcomes.

There have been similar cases of a multiple case design and an example is the case of Thompson (2010) where the purpose of the multiple case study was to understand more about caring teachers who work with at-risk students in secondary schools located in a Midwestern city and thereby to add complexity to the literature. The second case of a multiple case study was Sheffield (2009), where a multiple case study analysis of middle grades social studies teacher's instructional use of digital technology with academically talented students at three high-performing middle schools.

A case study was deemed suitable for this study because it focused on a single unit with a multiple case design, which, in this study, was the National Open University of Nigeria and the different study centres within it. Although in case studies the issue of generalisation of the research findings is always a concern, the advantages of using the case study design in this particular research outweighed the disadvantages. Punch (2005:146) contended that the intention of a case study is not to generalise, but rather to understand the case in its complexity and its entirety, as well as in its context. The case study enabled the researcher to have an in-depth evaluation of information literacy skills among students in the different study centres at the National Open University of Nigeria.

According to Yin (2014:10), the case study method is particularly appropriate when the research question starts with "How?" or "Why?" This study investigated the information and literacy skills of the National Open University students through multiple lenses rather than simply one isolated characteristic. It looked at the level of integration of information literacy in the curriculum of the University and sought for strategies that could be adopted for the implementation of information literacy and lifelong learning.

The rationale for adopting a case study approach was driven by the need for both quantitative and qualitative methods to fully explore the information acquired on information literacy and lifelong learning from students, the deans of schools and the professional librarians in the University. The use of the case study approach was appropriate as it allowed for the investigation of particular phenomena to some depth in a short space of time.

This research used multiple sources of evidence which included questionnaires, interviews and document analysis. The use of multiple sources of collection in case studies allowed the researcher

a broader range of methods to assess the information literacy and lifelong learning in the National Open University of Nigeria.

3.15 Summary

A quantitative dominated case study approach was adopted to study the information literacy and lifelong learning skills of students in the National Open University of Nigeria. A case study approach was adopted in view of the limited time and resources available and the nature of the problem. The research was a multiple-case study approach. As stated by Yin (2003), the use of multiple case studies allowed a more thorough exploration of the research topic by identifying similarities and differences within and between cases. The case study approach gave itself to in-depth investigation of a problem within a reasonably short space of time. In this chapter there is a detailed explanation of the rationale for the choice of a case study with the multiple cases design, the methods of data collection, ethical considerations, the data analysis, and data validity and reliability. The next chapter focuses on the analysis and presentation of the research results.

CHAPTER FOUR

PRESENTATION AND ANALYSIS OF FINDINGS

4.0 Introduction

The previous chapter elaborated on the research methodology that was used in the current study. This chapter presents the findings of the empirical investigation. Data analysis is the process of obtaining meaning and implications from raw data (Saldana 2009). The purpose of this chapter is to transform raw data into some meaningful facts (information) and describe to the reader the data collected from the sampled population of the study. Neuman (2006) observed that in the data analysis the researcher carefully examines empirical information to reach a conclusion based on reasoning and simplifying the complexity in the data. The results in this chapter are presented through written descriptions, numerical summations and figures.

Relevant documents were selected amongst the University documents such as the University Blueprint, Annual Report, the Strategic Plan (2012-2017), and the General Studies and National Open University Course material (Good Study Guide). This document analysis was conducted to validate the information gained from the previous instruments. The chapter ends with a summary of the key findings of the investigation.

4.1 Results from the Quantitative Instrument

Response rates inform researchers of the proportion of their sample that did not respond to their instruments and also may lend insight into the reasons selected persons (or units) did not respond. Johnson and Owens (nd) posited that full disclosure of research methods and procedures is one of the basic tenets of scientific research. Survey researchers have long assumed that the best way to obtain unbiased estimates is to achieve a high response rate. According to Biemer and Lyberg (2003), response rates are generally considered to be the most widely used statistics for judging the quality of surveys. It has been observed that, recently, researchers have higher expectations for survey response rates.

The distribution of the respondents by their study centres indicated that students were from Ikeja study centre, Abuja study centre, Benin study centre, Apapa study centre and Port Harcourt study

centre. Out of 384 questionnaires that were sent out to students in these five centres, a total of 358 were returned and 93% was the response rate of this study and was therefore high and very adequate. The main reason for this high rate was largely because the instrument was shared during the student's contact session and the students were fully available to attend to the instrument. Babbie and Mouton (2001:261) affirmed that the higher the response rate in a study, the less chance of significant response bias than with a low rate.

4.1.1 Biographical Distribution of Students

Section A of the questionnaire consisted of seven questions which solicited information under the following sub-headings: socio-demographics, types and forms of instructional materials in the National Open University of Nigeria, resources and facilities in relation to information literacy skills development, adequacy of information resources and facilities at the university library in relation to information literacy skills and level of awareness of information literacy programmes in the University.

The characteristics of the respondents and their academic details were not part of the objectives of this study, but the background information provided by the respondents on aspects such as year of admission, level of study and course of study enabled the researcher to provide a comprehensive picture of the respondents.

4.1.1.1 Distribution by Study Centre Distribution

NOUN is an ODL University and has different study centres in the thirty-six states of the federation. In order to describe the study centre distribution of the study, students were asked to indicate the various centres in which they were registered. The distribution of the respondents by their study centres, as shown in table 4.1, indicated that 134 (37.4%) of them were from Ikeja study centre, while 81 (22.6%) were from Abuja study centre. 63 (17.6%) were from Benin study centre, 32 (8.3%) from Apapa study centre and 48 (13.4%) from Port Harcourt study centre. This centre distribution cuts across the geographical distribution of the states in Nigeria.

Table 4.1: Distribution of Respondents by Study Centre Distribution

Name of Study Centre	Frequency	Percentage
Benin study centre	63	17.6
Abuja study centre	81	22.6
Apapa study centre	32	8.9
Ikeja study centre	134	37.4
Port Harcourt study centre	48	13.4
Total	358	100.0

4.1.1.2 Distribution of Respondents by Gender

In the demographic description, students were asked to indicate their gender. The results of the study on gender are shown in table 4.2. Analysis of the results indicated that out of 358 respondents in the study, 221(61.7%) of the respondents were male while 137(38.3%) were female. From all indications, if one gender group had participated in this study, the findings would have been biased; therefore, it was important to include both genders in the study. This result showed the dominance of male students over the female students in the sampled study centres.

Table 4.2: Distribution of Respondents by Gender

Gender	Frequency	Percentage
Male	221	61.7
Female	137	38.3
Total	358	100.0

4.1.1.3 Distribution of Respondents by Age

Respondents were asked to indicate their ages in the questionnaire. The age distribution as shown in table 4.3 revealed that the majority (135 or 37.7%) of the respondents were between 20 and 27 years of age, which constituted the largest proportion, whereas only 15 (4.2%) were 45 years and above. The 114 (31.8%) students were between 28 and 35 years and 44 were 36 and 44 years old (12.3%). The mean age was 28 years.

This distribution confirmed that the National Open University is an open and distance learning environment and the expectation is that the students are meant to be both mature and young students, the majority of the students in the University were young students though majority of them were not above 50 years. The results also indicated that the majority of students who used the library frequently were young students who were between the ages of 20 and 27 years. It is important to state here that the younger people are more techno-oriented and are known as digital natives Elsker & Eynon (2009), Combes (2006). This explained why the majority of them are enrolled in the University.

Table 4.3: Distribution of Respondents by Age

Age (years)	Frequency	Percentage
<20	50	14.0
20-27	135	37.7
28-35	114	31.8
36-44	44	12.3
≥45	15	4.2
Total	358	100.0

4.1.1.4 Distribution of Respondents by Year of Admission

It was necessary to find out the year of admission of each respondent as the response would determine the length of time a student had been enrolled in the University and the level of knowledge the student would have about the University and its facilities. The students were asked to indicate the year they were given admission to the University. The results in table 4.4 showed that the majority 248 (69.3%) of the respondents were admitted between 2013 and 2016, 101 (28.2%) got admission between 2010 and 2012 while only 9 (2.5%) were admitted between 2007 and 2009. It is evident that a large percentage of the respondents in the study had spent approximately four to five years in the University and it is expected that they would be conversant with the facilities and policies in the University.

Table 4.4: Distribution by Year of Admission

Year of admission	Frequency	Percentage
2007-2009	9	2.5
2010-2012	101	28.2
2013-2016	248	69.3
Total	358	100.0

4.1.1.5 Distribution of Respondents by Level of Study

The level of study of a student is the academic year or grade of a student. This determines to an extent the student's academic ability and awareness of policies, facilities and activities in the University. The student in the 100 Level are those newly admitted students, and the 200 level students are in those in second year and the 300 level in their 3rd Year. This is actually dependent on the number of years of the programme.

When asked to indicate the level of study 209 (58.4%) of the respondents were between 300 and 500 levels, 100 (27.9%) were between 100 and 200 levels while 35 (9.8%) of them were in 800 level and only 14 (3.9%) were undertaking postgraduate diploma programmes (see table 4.5). Here the level of study is equivalent to the year of study of the students. From the analysis below, the majority of the respondents were mature students and had spent a longer period in the University.

Table 4.5: Distribution of Respondents by Level of Study

Distribution by level of study	Frequency	Percentage
100 - 200 Level	100	27.9
300 - 500 Level	209	58.4
800 Level	35	9.8
Post Graduate Diploma	14	3.9
Total	358	100.0

4.1.1.6 Distribution of Respondents by Course of Study

The students were asked to indicate their courses of study. The distribution of respondents by courses of study in Figure 4.1 revealed that 77 (21.5%) of the respondents studied Computer Science, 45 (12.6%) studied Entrepreneur Studies and 23(6.4%) studied Accounting. Also, 2 (0.6%) each studied Educational Technology, business Management, and other social science related courses. From the results analysed, it can be deduced that the students were mainly computer, technology and business oriented in their choice of study.

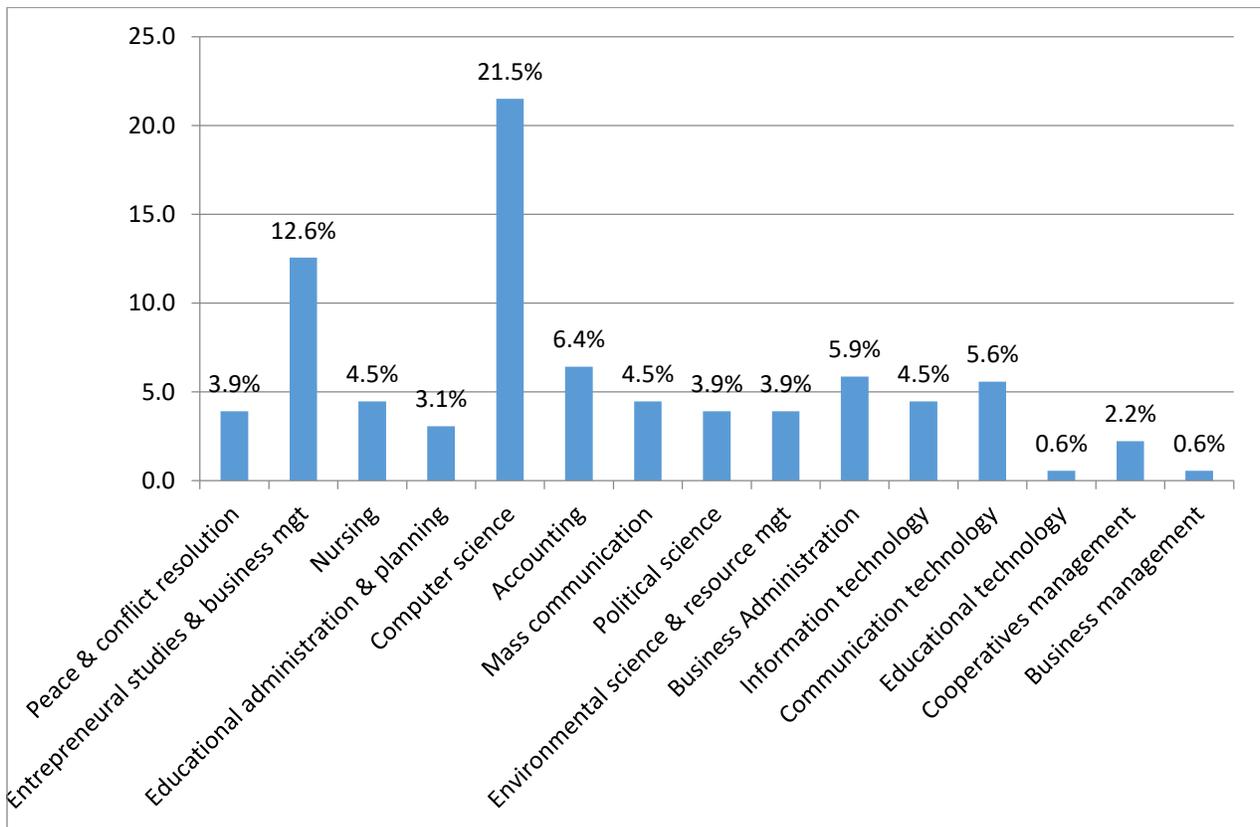


Fig. 4.1: Distribution of Respondents by Courses of Study

4.1.1.7 Distribution of Respondents by School of Study

In the National Open University of Nigeria, the division of the academic nomenclature are known as ‘schools’. There are seven schools broadly represented in the University. The respondents were asked to indicate their schools of study as this would serve as a guide in the latter part of the study for the interview process of the deans of the schools who are also the academic heads of the

schools. The representation of the respondents would give the researcher a fair idea of the schools that were largely represented. The results indicated that 145 (40.5%) of the respondents were in the School of Science and Technology, while 113 (31.6%) were in the School of Management, 55 (15.4%) were in the School of Arts and Social Science, 17 (4.7%) were in the School of Education, 16 (4.5%) in the School of Health Sciences, 10 (2.8%) in the School of Law while only 2 (0.6%) of them were in the School of Agricultural Sciences. From the distribution below, it can be seen that all the schools were represented in the study.

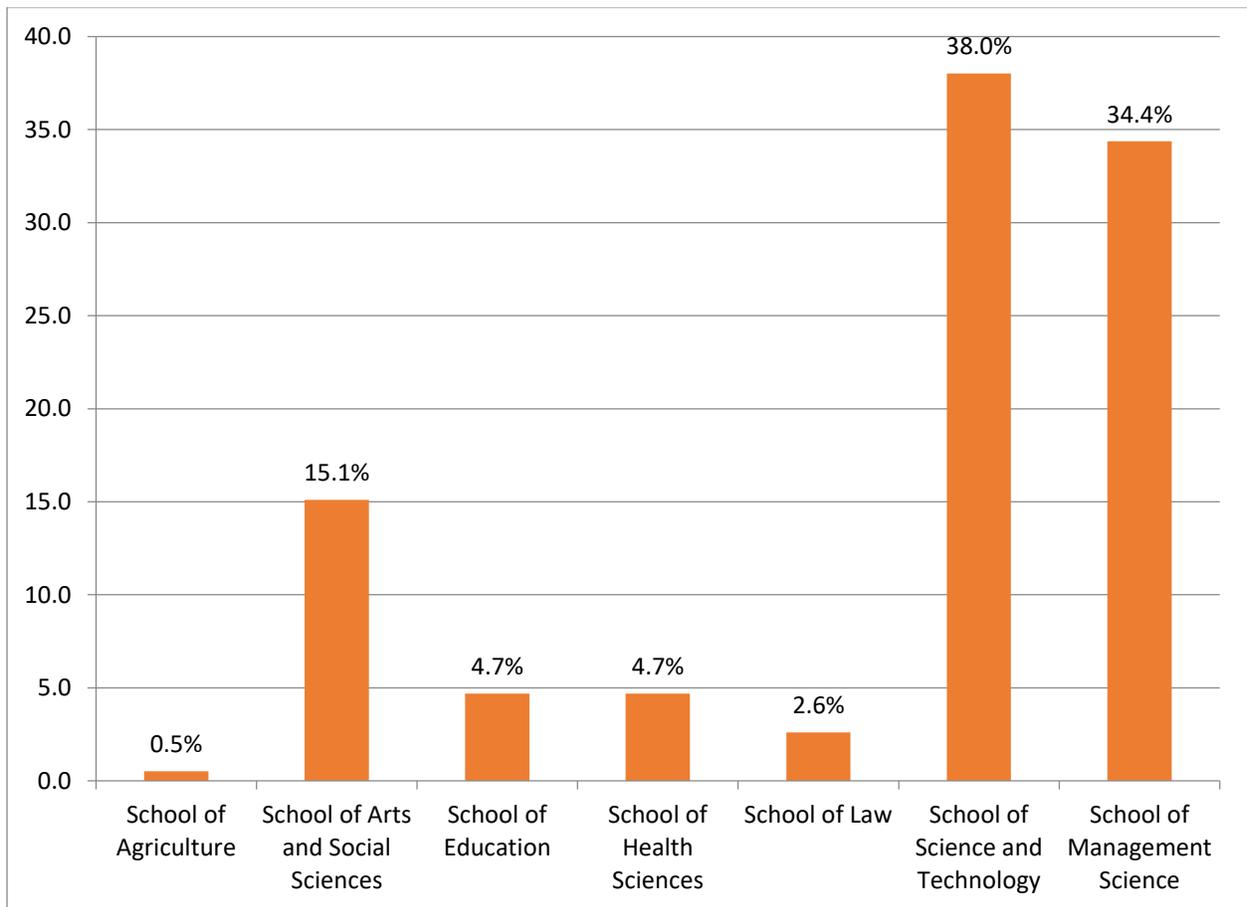


Fig 4.2: Distribution of Respondents by School of Study

4.1.1.8 Types of Information Literacy Materials Available at NOUN

Section B of the questionnaire consisted of questions which inquired about the types of information literacy materials used to promote the information literacy of the students in the National Open University of Nigeria.

The respondents were requested to indicate the extent and availability of the information literacy materials. This question was important to the study as the researcher intended to ascertain the level of the availability of these materials in the University. According to the weighted scores, which were computed by multiplying the percentage of a specific response with the figures used to code the response and thereafter adding up all the responses for a particular item, it is indicated in table 4.6 that the most available information literacy materials were course materials (254.8); this was followed, in descending order of prominence, by the university library website (253.7), library catalogue (online) (252.3), reference materials (print) (246.7), reference material (online) (246.6) and E-books (online) (245.2) . The library resources with the least prominence in terms of availability were journal articles (print) (213.3), databases (210.1), government gazettes/other documents (208.7) and PowerPoint presentations (188.6).

Table 4.6: Distribution of Responses on Types of IL Library Material

Types of IL Library materials	Always available	Rarely available	Never available	Weighted score*
Course materials	65.6%	23.7%	10.6%	254.8
University library websites	69.3%	14.5%	16.2%	253.1
Library catalogue (online)	66.8%	18.7%	14.5%	252.3
Reference materials (print)	63.7%	19.3%	17.0%	246.7
Reference materials (online)	63.1%	20.4%	16.5%	246.6
E-books	63.4%	18.4%	18.2%	245.2
Book chapters (print)	56.7%	20.1%	23.2%	233.5
Professional web pages	52.8%	26.8%	20.4%	232.4
Online indexes	54.2%	21.8%	24.0%	230.2
Periodicals (online)	43.0%	33.2%	23.7%	219.1
Periodicals (print)	40.8%	33.2%	26.0%	214.8
A manual describing the proper format for a research paper	37.4%	39.7%	22.9%	214.5
A handout explaining how to get books from other libraries	39.9%	34.1%	26.0%	213.9

Types of IL Library materials	Always available	Rarely available	Never available	Weighted score*
Journal articles (online)	43.9%	25.7%	30.4%	213.5
Journal articles (print)	40.8%	31.6%	27.7%	213.3
Databases (e.g. JSTOR, Questia, Ebscohost)	40.5%	29.1%	30.4%	210.1
Government gazette/other documents	39.4%	29.9%	30.7%	208.7
PowerPoint presentations	27.1%	34.4%	38.5%	188.6

* Weighted scores were computed in certain tables to highlight the extent to which the items were subscribed to by the majority of the respondents. This was done by multiplying the percentage of a specific response with the figures used to code the response and thereafter adding up all the responses for a particular item. The weighted score of the item with the highest value will be the dominant item in the scale.

From the results presented above, it is evident that the course materials were the most available types and forms of information literacy in the university library. In the University, after payment of academic fees for the semester, students are given print copies of course materials based on their courses of study and they can also download the electronic copy on the university website. At the same time, backup copies of the course material are deposited in the library for students. These course materials are written by course writers (academic staff) specifically for the students of the National Open University. This readily explains why the availability of the course materials had the highest percentage of responses from the students. The power point presentation was amongst the least available library instruction in the study because the University is a distance learning institution and the students rarely have to converge for face-to-face tutoring.

4.1.1.9 Extent of Use of Available Types of IL Resources

The researcher sought to assess the extent to which the available resources were put to use by the respondents. The students were asked to indicate the extent to which they used the available library resources provided by the University. The results of the assessments are as shown in table 4.7. The results reveal that the mostly used IL resources were course materials (379.4); this was followed by university library websites (369.3). Reference materials (online) (368.2), E-books (367.4), reference materials (online) and book chapters (print) were also indicated as the most used resources available in the library. The IL materials that were not as much used as others were journal articles (print) (334.4), databases (331.0), government gazettes/other documents (328.8) and departmental Power Point presentations (322.1).

The course material is the most readily available information resource for use by students especially since the students paid for and purchased these course materials for themselves. The only way these course materials are made available to the students aside from their purchased copy is through the ones deposited in the library and students can only borrow them for academic purposes.

The university website is the gateway to information for the open and distance learning students. Students visit the website regularly for the latest news and information that is relevant to them. The library website is an avenue for which some of the information on library use and subscribed databases are displayed. This makes it evident why course materials and the university website were amongst the most frequently used information resources.

Table 4.7: Extent of Students' Use of Available Types of IL Library Resources

Use of available IL resources	Once a week	Twice a month	More than 10 times a year	Never	Weighted score*
Course materials	38.0%	19.3%	26.8%	15.9%	379.4
Professional web pages	34.1%	23.7%	19.6%	22.6%	369.3
Reference materials (online)	36.9%	17.0%	23.5%	22.6%	368.2
E-books	34.4%	21.2%	21.8%	22.6%	367.4
University library websites	33.8%	18.7%	22.6%	24.9%	361.4
Library catalogue (online)	32.1%	15.4%	24.9%	27.7%	352.2
Reference materials (print)	29.9%	18.2%	25.1%	26.8%	351.2
Periodicals (online)	28.2%	24.0%	17.9%	29.9%	350.5
Book chapters (print)	25.4%	25.1%	20.9%	28.5%	347.1
Journal articles (online)	30.4%	15.4%	20.1%	34.1%	342.1
Periodicals (print)	25.4%	24.9%	15.6%	34.1%	341.6
Online indexes	26.3%	19.3%	22.3%	32.1%	339.8
A manual describing the proper format for a research paper	22.6%	24.9%	18.4%	34.1%	336.0
Journal articles (print)	24.0%	23.2%	15.9%	36.9%	334.3
Databases (e.g. JSTOR, Questia, Ebscohost)	24.0%	23.5%	12.0%	40.5%	331.0
A handout explaining how to get books from other libraries	25.7%	15.9%	21.8%	36.6%	330.7
Government gazette/other documents	23.2%	23.2%	12.6%	41.1%	328.8
PowerPoint presentations	21.8%	21.8%	13.1%	43.3%	322.1

* Weighted scores were computed in certain tables to highlight the extent to which the items were subscribed to by the majority of the respondents. This was done by multiplying the percentage of a specific response with the figures used to code the response and thereafter adding up all the responses for a particular item. The weighted score of the item with the highest value will be the dominant item in the scale.

4.1.1.10. Most Frequent Reason for Using the Library

After inquiring about available information resources and the extent of the use of the IL resources, it was necessary to find out the most frequent reason for which the students used the library. The respondents were asked to indicate the purpose for which they used the resources in the library. The results in Figure 4.3 show that 102 (28.5%) of the students use the library resources for academic tasks, 55 (15.4 %) of them use it for conducting research while only 41 (11.5%) of them use it for recreation and non-academic purposes. A large number of respondents - 160 (44.7%) - did not indicate specifically the most frequent reason for using the library resources. From the information derived as a librarian in the University, the reason for the students' unidentified responses could be that the students have diverse reasons for using the library such as reading for examinations, borrowing books and course materials, having group facilitations, reading newspapers and magazines and browsing the internet, and do not evaluate the reason for frequently using the library.

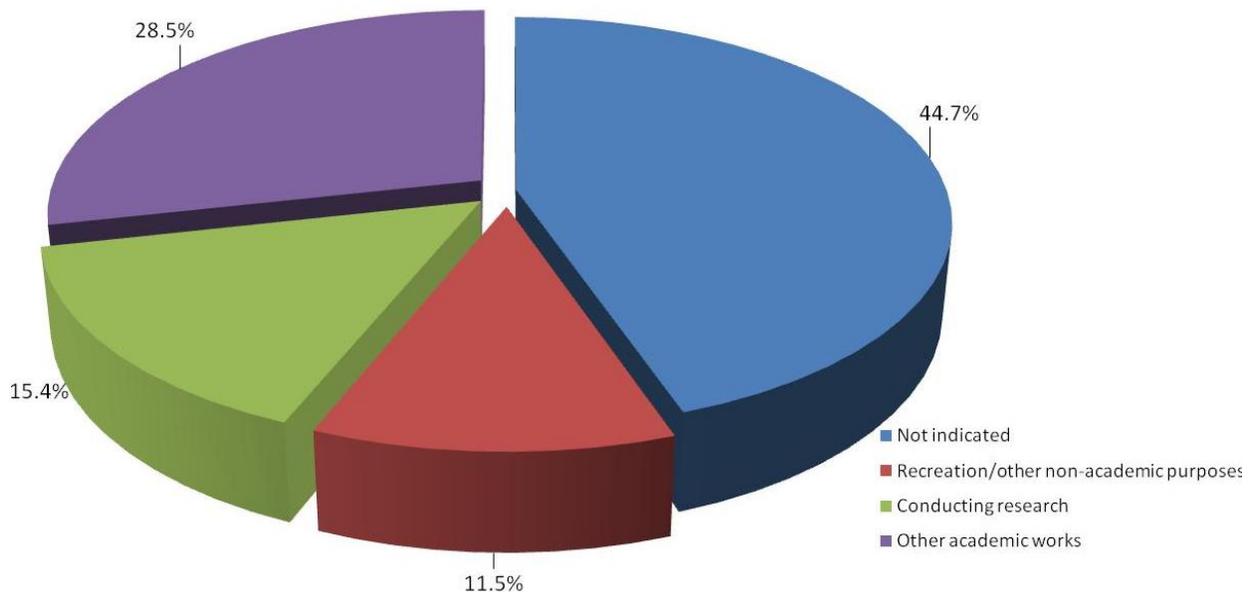


Fig 4.3: Distribution by Most Frequent Reason for Using the Library

4.1.1.11 Adequacy of Library Resources

The researcher aimed to find out the adequacy of the library resources that were provided in relation to their information literacy development. The respondents were asked to indicate which information resources were adequately provided towards improving their information literacy skills. Unlike course materials which are bought or downloaded by students, the resources addressed here are library materials that are being purchased or subscribed for by the university library. The outcome of the assessment revealed in table 4.8 that amongst the resources provided in the library, the government gazette/reports, 316.8) were the mostly adequate resources at the university library; this was followed in descending order by E-books (online) (314.7), journal articles (online) (310.1), journal articles (print) (307.5) and scholarly web pages (305.0). The library resources and facilities that were assessed as relatively least adequately provided were reference materials (294.5), handouts explaining how to access resources from other libraries (290.2) and manuals describing the proper format for a research paper (285.5).

Due to financial constraints and budgetary matters, purchased and subscribed materials, especially reference materials, are not always sufficient. Being a government university in the country, annual reports and statistical reports donated by other universities and organisations were materials that were found amongst the collections of the library and this served as an explanation of the results below. The responses from the students could also be as a result of their dissatisfaction with the availability and adequacy of these resources in the library.

Table 4.8: Adequacy of Library Resources

Library instructional materials	Very adequate	Adequate	Not sure	Inadequate	Grossly inadequate	Weighted score*
Government gazette/reports	20.7%	16.2%	34.6%	16.2%	12.3%	316.8
Journal articles (online)	21.5%	14.0%	30.7%	20.7%	13.1%	310.1
Journal articles (print)	20.4%	14.8%	29.3%	22.9%	12.6%	307.5
E-books (online)	29.9%	12.3%	18.4%	20.9%	19.0%	314.7
Scholarly web pages	20.7%	17.3%	24.9%	20.4%	16.8%	305.0
Online indexes	17.9%	16.5%	30.4%	23.5%	11.7%	305.4

Departmental PowerPoint presentations	20.1%	11.2%	35.2%	19.8%	13.7%	304.2
Databases (e.g. JSTOR, Questia, Ebscohost)	16.2%	13.7%	40.2%	16.2%	13.7%	302.5
Periodicals (print)	17.9%	15.1%	33.5%	20.4%	13.1%	304.3
Periodicals (online)	21.2%	9.5%	34.4%	20.1%	14.8%	302.2
Library catalogue (online)	23.2%	14.5%	24.9%	15.4%	22.1%	301.6
University library websites	20.9%	17.9%	22.3%	19.0%	19.8%	300.8
Book chapters (print)	17.3%	22.3%	20.4%	20.9%	19.0%	297.7
Course materials	24.6%	16.8%	16.5%	17.3%	24.9%	299.2
Reference materials (online)	24.0%	12.0%	22.3%	21.5%	20.1%	298.0
Reference materials (print)	20.1%	16.8%	20.4%	22.9%	19.8%	294.5
A handout explaining how to access resources from other libraries	21.5%	8.9%	27.7%	22.1%	19.8%	290.2
A manual describing the proper format for a research paper	15.6%	14.5%	28.5%	22.1%	19.8%	285.5

* Weighted scores were computed in certain tables to highlight the extent to which the items were subscribed to by the majority of the respondents. This was done by multiplying the percentage of a specific response with the figures used to code the response and thereafter adding up all the responses for a particular item. The weighted score of the item with the highest value will be the dominant item in the scale.

4.1.1.12 Level of Awareness of Information Literacy Programmes in the University

This researcher sought to find out the level of awareness of the students on the information literacy programmes provided in the library. Students were asked to indicate their level of awareness of the information literacy programmes that were conducted in the University. The results revealed in table 4.9 that 252 (70.4%) students were aware of the GST (course on the Use of Library and 106 (29.6%) were unaware of the programme. When asked to indicate their level of awareness on the assistance of the basic use of computers, the majority of the respondents - 238 (66.5%) - were aware while 120 (33.5%) were unaware of the programme. With the use of the online library

catalogue (OPAC), 217 (60.6%) were aware of its availability and 141 (39.4%) were not aware of its availability. About 220 (61.5%) were aware of the availability of the NOUN orientation document and 138 (38.5%) indicated on different occasions not being aware of the existence of this programme. The 193 (53.9%) respondents were more aware of the library orientation programme and 165 (46.1%) of the respondents also indicated with similar level of percentages that they were aware, 216 (60.3%) indicated that there were tutorials on how to use search tools to find possible sources and user education on the use of the library, but 141 (39.4%) students were not aware of these programmes. The information literacy programmes in which more of the respondents were unaware were the availability plagiarism software 190 (53.1%) and the availability of the citation guide (194/54.2%).

The majority of the respondents were more aware of information literacy programmes like the GST course on the use of the library, use of the online catalogue, availability of the NOUN orientation document and the library orientation programme because these programmes are part of the university programmes and some are embedded in the courses of the study of the respondents. Information literacy programmes such as the plagiarism software and the availability of citation guides are more University projects and students are exposed to them only occasionally, hence they aren't fully aware of their existence in the University.

Table 4.9: Distribution of Students' Level of Awareness of IL Programmes in the University

Information Literacy Programmes	Aware	Unaware
GST (General Studies) course on Use of Library	252 (70.4)*	106 (29.6)
Assistance on basic use of computer for information search	238 (66.5)	120 (33.5)
Using a library catalogue (online)	217 (60.6)	141 (39.4)
Availability of NOUN orientation document	220 (61.5)	138 (38.5)
Library Orientation Programme	193 (53.9)	165 (46.1)
Tutorial on using search tools to find possible sources	216 (60.3)	142 (39.7)
User education on the use of the library	217 (60.6)	141 (39.4)
Availability of NOUN copyright policy	195 (54.5)	163 (45.5)
Availability of NOUN plagiarism software	168 (46.9)	190 (53.1)
Availability of citation guide	164 (45.8)	194 (54.2)

* All figures in parenthesis are percentages

4.1.1.13 Competency Level of Information Literacy among the Students of NOUN

The question was designed to determine the competency level of the students of NOUN on information literacy. The results in Fig 4.4 showed that most of the respondents – 191% (53.6 %) - had a high level of competence regarding information literacy while 167 (46.6%) had a low competency level. The students were asked to indicate their competence level in the search for information, use of information sources, organisation, evaluation and research. The respondents indicated that they had a high competency level because they felt they handled the academic assignments given to them in the past in the course of their study.

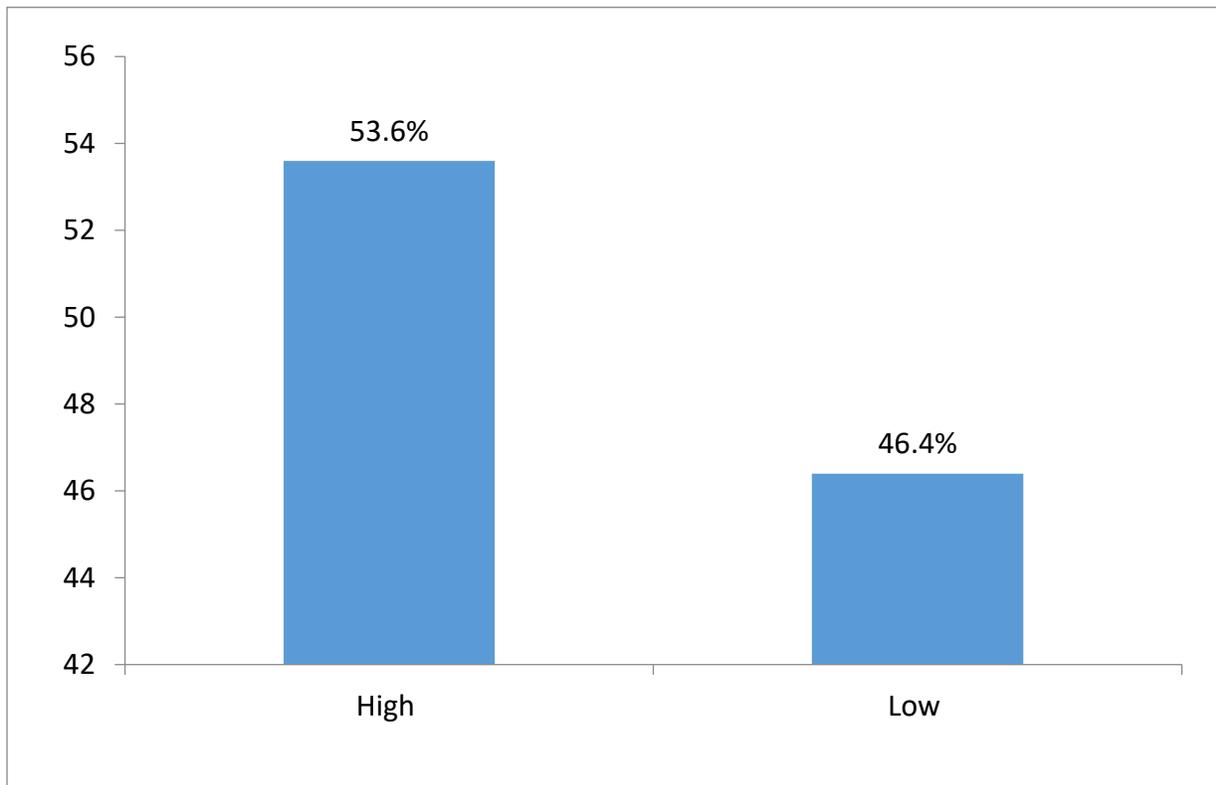


Fig 4.4: Distribution by Level of Information Literacy Competency

4.1.1.14 Level of Information Literacy in the National Open University of Nigeria

The respondents were asked to rate the level of information literacy based on the existing information literacy facilitation factors. The results in table 4.10 showed that the provision of the assistance on basic use of computers for information search (263.1) was a major factor in

facilitating information literacy at the university library and the services were getting better. This was followed in descending order by use of library catalogue (online) (259.1), availability of the NOUN orientation document (256.6), the General Studies (GST) course on use of library (255.5), and availability of the NOUN copyright policy (253.6). For factors such as the availability of the citation guide (245.6), professional and friendly interaction of library staff members with library users (244.1) and tutorial on using search tools to find possible sources (242.5), the respondents felt there wasn't much improvement in the level of development and as such they had no expectation for the information literacy programme. This clearly shows that the university management and library staff have a lot of work to do towards the development of information literacy programmes.

Table 4.10: Assessment of Level of Information Literacy in NOUN

Information literacy development factors	Getting better	Remain unchanged	Getting worse	Weighted score*
Assistance on basic use of computers for information search	68.4%	26.3%	5.3%	263.1
Using library catalogue (online)	64.0%	31.3%	4.7%	259.3
Availability of NOUN orientation document	59.8%	36.9%	3.4%	256.6
GST course on Use of Library	58.7%	38.0%	3.4%	255.5
Availability of NOUN copyright policy	56.8%	39.9%	3.4%	253.6
Library Orientation Programme	52.8%	45.0%	2.2%	250.6
Appropriate number of library staff	55.0%	39.4%	5.6%	249.4
User education on the use of the library	51.7%	45.5%	2.8%	248.9
Competence of library staff	54.5%	38.0%	7.5%	247.0
Availability of NOUN plagiarism software	54.5%	37.4%	8.1%	246.4
Availability of citation guide	50.8%	44.1%	5.0%	245.6
Professional and friendly interaction of library staff members with the users of library facilities	53.4%	37.2%	9.5%	244.1

Information literacy development factors	Getting better	Remain unchanged	Getting worse	Weighted score*
Tutorial on using search tools to find possible sources	47.5%	47.5%	5.0%	242.5

* Weighted scores were computed in certain tables to highlight the extent to which the items were subscribed to by the majority of the respondents. This was done by multiplying the percentage of a specific response with the figures used to code the response and thereafter adding up all the responses for a particular item. The weighted score of the item with the highest value will be the dominant item in the scale.

4.1.2 Professional Librarians' Questionnaire Distribution

The professional librarians were the second set of respondents with which the questionnaires were administered. The professional librarians are fifty-three in number and the second set of questionnaires were shared with twenty-one (21) librarians who were available in the library during the data collection period, twelve questionnaires were sent out but not returned and twenty (20) librarians were on academic sponsorship and were not available to complete the questions because of their academic schedule in different parts of the country. The results of data collected from the professional librarians are presented in tables and in figures.

The socio-demographic information of the librarians included their gender, age in years, years of experience as a librarian, degree obtained, academic institution attended, current cadre and duty section in the library. The characteristics of the respondents and the current cadre of the professional librarians were not part of the objectives of this study, but the information provided background information on the different aspects being investigated such as their qualifications, years of experience and current cadre of the librarians. This information was necessary because the information provided highlighted the quality of information provided by the staff based on the status or the length of stay in the institution.

The authenticity of the information given by the respondents was reliable and provided internal information and accurate information especially from the professionals who have worked and interacted with the students. The information from the distribution of the duty sections of the library staff also revealed the level of interaction the librarians have with their students.

4.1.2.1. Gender Distribution of Librarians

In order to understand the characteristics of the librarians as respondents in the study, the librarians were asked to provide the socio-demographic information before answering the core questions about the library. The results of the distribution of the librarians' gender as shown in table 4.11 indicates that majority; 13 (61.9%) - of them were female while (8) 38.1% were male. In the staff distribution of the librarians in the National Open University of Nigeria, it is evident that there are more females than males.

Table 4.11: Gender Distribution of Librarians

Gender	Frequency	Percentage
Male	8	38.1
Female	13	61.9
Total	21	100

4.1.2.2 Age Distribution of Librarians

Their age distribution reflected that most, 17 (80.9%) - of the librarians were between the ages of 29 and 37 years, 2 (9.5%) were between 38 and 46 years of age while 1 (4.8%) was between 47 and 55 years. The mean age was 36 years. From the results, most of the librarians in the library were young professionals.

Table 4.12: Age Distribution of Librarians

Age (years)	Frequency	Percentage
29-37	17	80.9
38-46	2	9.5
47-50	1	4.8
51-55	1	4.8
Total	21	100.0

4.1.2.3 Years of Work Experience of Librarian

Results on years of experience showed that most; 13 (61.8%) - of the respondents had between 3 and 7 years of experience, 6 (28.6%) had between 8 and 12 years, while 2 (9.6%) had 13 and above years of experience. It is obvious that most of the professionals had worked in the library for 3 to

12 years. The National Open University library was established in 2007 and the recruitment process began in the same year, and some of the staff in the University had previous work experiences before being employed in NOUN.

Table 4.13: Years of Work Experience of Librarians

Year of experience	Frequency	Percentage
3-7 years	13	61.8
8-12 years	6	28.6
13-17 years	1	4.8
18-23 years	1	4.8
Total	21	100.0

4.1.2.4 Professional Cadre of Librarians

The respondents were asked to indicate their current cadre in the profession, this is the professional level of the staff and often related to level of experience, and level of qualification. The results revealed that the majority of the respondents - 15 (71.4%) - were on the cadre of Assistant Librarian, 3 (14.3%) were on Librarian II, while 1 each (4.8%) was on the Principal Librarian, Senior Librarian and Librarian I cadre. This showed that the majority of the staff in the university library were on the junior library management level and there was need for the recruitment and engagement of senior librarians on a higher professional level.

Table 4.14: Professional Cadre of Librarians

Current Cadre	Frequency	Percentage
Principal Librarian	1	4.8
Senior Librarian	1	4.8
Librarian I	1	4.8
Librarian II	3	14.3
Assistant Librarian	15	71.4
Total	21	100.0

4.1.2.5 Educational Qualification

The researcher sought to find out the educational qualifications of the librarians in the University. The librarians were asked to indicate their highest academic qualification. The results on qualifications obtained by the librarians showed that 3 (14.3%) of them obtained a bachelor's degree in library science, 2 (9.5%) had master's degree in library science, while 1 (4.8%) of them had other degrees in related disciplines. Similar to the issue raised with the cadre level of the professional librarians, it can be deduced that the majority of the librarians under study only have a first degree in Librarianship and very few have their master's and doctoral degrees. This is indicated in fig.4.5.

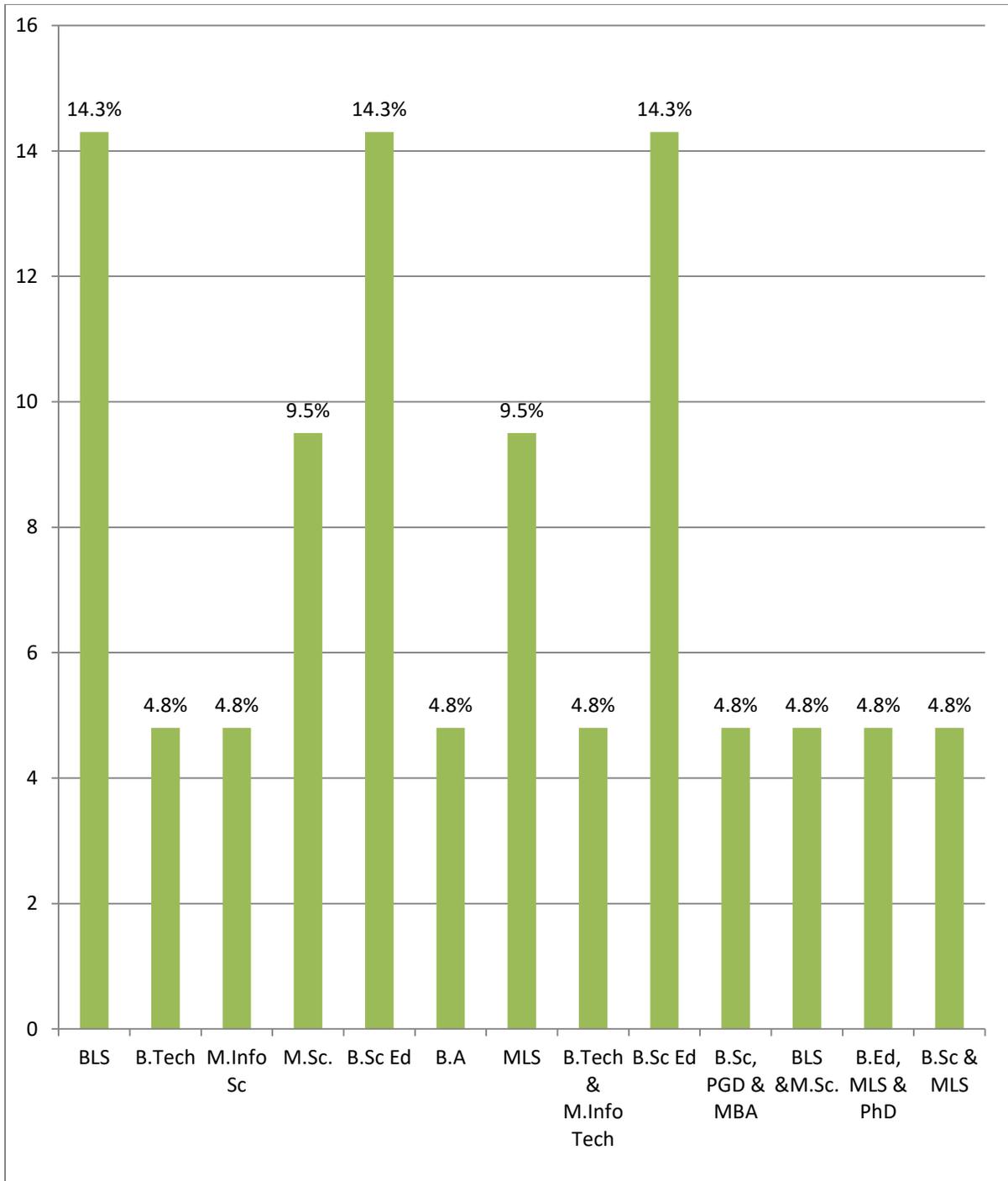


Fig.4.5: Distribution of Respondents by Degree Obtained

4.1.2.7 Duty Section in the Library

The sections where each librarian works determine the services provided and also the level of interaction the librarian has with the students. It was necessary to find out from the respondents the different duty sections where they worked. The results showed that the majority; 4 (19.0%) of the respondents were in the cataloguing and classification section, 2 (9.5%) were in each of the Law Library, Virtual/Electronic Library, the Study Centre Library and the general work section while 1 (4.8%) of them was in other sections of the library. From the analysis above, it is evident that the academic librarians are more involved in technical activities and do not have close interaction time with the students whenever they visit the library because they are performing behind the scene services.

Due to the uniqueness of the National Open University where librarians are employed and deployed to different sections and study centres periodically there is often little time for reference services and interactive sessions with users.

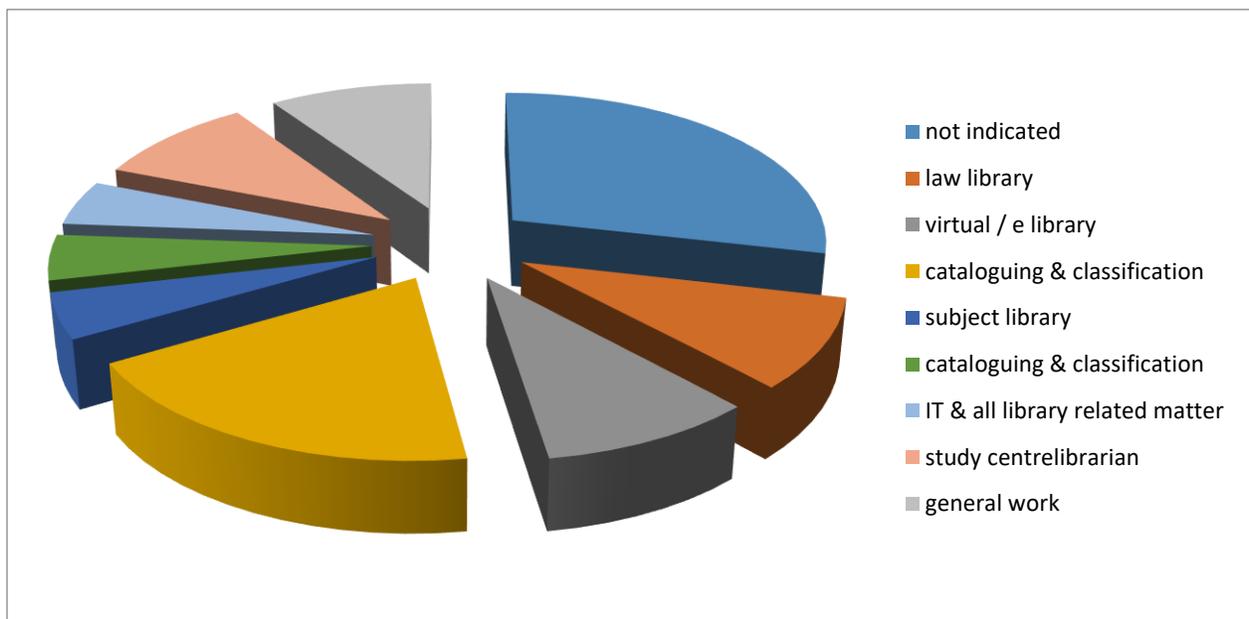


Fig. 4.6: Distribution of Respondents by Duty Section

4.1.2.8 Types of Information Literacy Resources Available at NOUN

The researcher sought to identify the types of information literacy resources available at the National Open University of Nigeria. From the librarians' perspectives, the results indicated that the information literacy resources mostly available (according to the weighted scores) were course materials (185.8), reference materials (print) (185.7), book chapters (print) (157.2), university library websites (152.3), journal articles (online) (142.8) and reference materials (online) (128.5). The ones with least prominence in terms of availability were handouts explaining how to get books from other libraries (47.5), PowerPoint presentations (61.9), government gazettes/other documents (90.5) and manuals describing the proper format for a research paper (104.7).

Table 4:15: Distribution on Available Types of IL Library Materials

IL instructional materials	Always available	Rarely available	Never available	Weighted score
Course materials	90.5%	4.8%	4.8%	285.9
Reference materials (print)	85.7%	14.3%	0.0%	285.7
Book chapters (print)	76.2%	4.8%	19.0%	257.2
University library websites	71.4%	9.5%	19.0%	252.2
Journal articles (online)	61.9%	19.0%	19.0%	242.7
Databases (e.g. JSTOR, Questia, Ebscohost,)	61.9%	9.5%	28.6%	233.3
Reference materials (online)	57.1%	14.3%	28.6%	228.5
Library catalogue (online)	52.4%	9.5%	38.1%	214.3
Journal articles (print)	38.1%	38.1%	23.8%	214.3
Periodicals (print)	33.3%	47.6%	19.0%	214.1
Periodicals (online)	47.6%	19.0%	33.3%	214.1
E-Books	47.6%	14.3%	38.1%	209.5
Professional web pages	38.1%	33.3%	28.6%	209.5
A manual describing the proper format for a research paper	47.6%	9.5%	42.9%	204.7
Online indexes	38.1%	19.0%	42.9%	195.2

Government gazette/other documents	28.6%	33.3%	38.1%	190.5
PowerPoint presentations	23.8%	14.3%	61.9%	161.9
A handout explaining how to get books from other libraries	19.0%	9.5%	71.4%	147.4

From the results below, it is evident that the respondents agreed that course materials were the most available types of information literacy resources available in the university library. Course materials are customised academic materials written by course writers and course facilitators for the National Open University students. Course materials are most available because, as this is academic material developed by the National Open University, copies are deposited in the library for students' use and students can readily download the electronic copies of these course materials from the university website or from the library website.

4.1.2. 9. Extent of Use of Available Types of IL Library Resources

The results in table 4.16 revealed that the mostly used library materials by users in the library were course materials (476.5), followed by university library websites (433.7), book chapters (print) (428.6), reference materials (print) (409.6) and journal articles (print) (385.4). The library resources that are relatively seldom used are government gazettes/other documents (314.2), online indexes (304.9), handouts on how to get books from other libraries (285.3) and departmental PowerPoint presentations (261.9). The course materials and university websites were the most heavily used library resources in the University.

Table 4.16: Extent of Use of Available Types of IL Library Resources

Types of IL library resources	Once a week	Twice a month	More than 10 times a year	Never	Weighted score
Course materials	90.5%	0.0%	4.8%	4.8%	476.5
University library websites	66.7%	14.3%	4.8%	14.3%	433.7
Book chapters (print)	71.4%	4.8%	4.8%	19.0%	428.6
Reference materials (print)	52.4%	14.3%	23.8%	9.5%	409.6
Journal articles (print)	47.6%	9.5%	23.8%	19.0%	385.4
Journal articles (online)	52.4%	4.8%	14.3%	28.6%	381.3
Library catalogue (online)	47.6%	9.5%	9.5%	33.3%	371.1
Reference materials (online)	47.6%	9.5%	9.5%	33.3%	371.1*
Periodicals (print)	42.9%	9.5%	19.0%	28.6%	366.7

Types of IL library resources	Once a week	Twice a month	More than 10 times a year	Never	Weighted score
Databases (e.g. JSTOR, Questia, Ebscohost,)	42.9%	9.5%	19.0%	28.6%	366.7
A manual describing the proper format for a research paper	42.9%	4.8%	9.5%	42.9%	348
E-Books	38.1%	9.5%	14.3%	38.1%	347.6
Professional web pages	33.3%	14.3%	19.0%	33.3%	347.3
Periodicals (online)	33.3%	9.5%	14.3%	42.9%	333.2
Government gazettes/other documents	19.0%	28.6%	0.0%	52.4%	314.2
Online indexes	28.6%	4.8%	9.5%	57.1%	304.9
A handout explaining how to get books from other libraries	19.0%	9.5%	9.5%	61.9%	285.3
PowerPoint presentations	9.5%	14.3%	4.8%	71.4%	261.9

* Weighted scores were computed in certain tables to highlight the extent to which the items were subscribed to by the majority of the respondents. This was done by multiplying the percentage of a specific response with the figures used to code the response and thereafter adding up all the responses for a particular item. The weighted score of the item with the highest value will be the dominant item in the scale.

4.1.2.10. Most Frequent Reason for Using the Library

The question sought to find out from the librarians the most frequent reasons for which students use the library. From their responses, the results show that 14 (67%) of the students use the library for academic works while 7 (33%) use it for conducting research work. Based on the request and interactions with students, the students' academic work could be grouped into requesting for course material, borrowing books, reading the national dailies and magazines, solving their TMA (tutored marked assignments) and meeting for their discussions. The research purposes are issues such as request for how to choose a research topic, how to cite sources and how to write reference sources.

Table 4.17: Distribution by Most Frequent Reason for Using the Library

Reasons	Frequency	Percent
Conducting research	7	33.0
Doing Academic work	14	67.0
Total	21	100.0

4.1.2.11 Adequacy of Information Resources and Facilities towards Information Literacy Skills Development

The researcher sought to determine the adequacy of information resources and facilities in relation to information literacy development. The outcome of the librarians' assessment revealed that journal articles (online) and databases (361.9) were the mostly adequately provided resource at the university library; these were followed in descending order by periodicals (online) and course materials (347.7) as well as reference materials (online) and university library websites (347.6). The lowest responses were for the library resources and facilities, the least adequate information resources were professional web pages (295.4), government gazette/other documents (295.0), handouts on how to get books from other libraries (285.7) and PowerPoint presentations (271.4).

Table 4.18: Adequacy of Information Resources/Facilities

Information Resources/Facilities	Very adequate	Adequate	Not sure	Inadequate	Grossly inadequate	Weighted score*
Journal articles (online)	33.3%	28.6%	14.3%	14.3%	9.5%	361.9
Databases (e.g. JSTOR, Questia, Ebscohost)	33.3%	28.6%	14.3%	14.3%	9.5%	361.9
Periodicals (online)	23.8%	28.6%	28.6%	9.5%	9.5%	347.7
Course materials	47.6%	42.9%	0.0%	0.0%	9.5%	347.7
Reference materials (online)	23.8%	38.1%	14.3%	9.5%	14.3%	347.6
University library websites	42.9%	38.1%	14.3%	0.0%	4.8%	347.6
Library catalogue (online)	28.6%	28.6%	4.8%	14.3%	23.8%	324.2
Book chapters (print)	9.5%	38.1%	28.6%	19.0%	4.8%	324.2
Reference materials (print)	23.8%	23.8%	14.3%	28.6%	9.5%	323.8
Journal articles (print)	23.8%	28.6%	9.5%	23.8 %	14.3%	323.8
E-books	28.6%	19.0%	19.0%	19.0%	14.3%	323.8
Online indexes	19.0%	19.0%	28.6%	14.3%	19.0%	304.4
A manual describing the proper format for a research paper	19.0%	33.3%	4.8%	14.3%	28.6%	299.8

Periodicals (print)	14.3%	28.6%	23.8%	14.3%	9.5%	295.4
Professional web pages	23.8%	23.8%	33.3%	9.5%	9.5%	295.4
Government gazettes/other documents	19.0%	19.0%	28.6 %	4.8%	28.6%	295.0
A handout explaining how to get books from other libraries	14.3%	33.3%	4.8%	19.0%	28.6%	285.7
PowerPoint presentations	9.5%	28.6%	14.3%	19.0%	28.6%	271.4

* Weighted scores were computed to highlight the extent to which the items were subscribed to by the majority of the respondents. This was done by multiplying the percentage of a response with the figures used to code the response and thereafter adding up all the responses for a particular item. The weighted score of the item with the highest value is the dominant item in the scale.

The National Open University subscribes to a vast number of databases that are made available to the university community. These databases include access to online journals and e-books. From the responses of the librarians, it can be deduced that the subscription by the university provides a wide range of available and accessible online journals and databases to students. Also because the National Open University is an ODL institution the librarians are aware that there is a tendency for the University to invest more funds in online resources for students who are constrained by distance.

4.1.2.12. Level of Librarians' Awareness of Information Literacy Programmes in the University

The researcher attempted to find out from the librarians the level of awareness that was provided for information literacy programmes in the library. The results also revealed that the librarians agreed that students were more aware of the library orientation programme (18/85.7%), the user education on library use (17/81.0%) and assistance on use of the computer for information searches (19/90.5%). The librarians were confident in their responses on the level of students' awareness of these programmes because at the beginning of every academic session for every student the university library in partnership with the study centre directors conduct an orientation session where a librarian gives a presentation on the use of the library. In the library itself periodically the

librarians would also conduct library education sessions for users or provide a one-on-one assistance to users on the use of the computer.

The information literacy programmes about which more of the librarians confirmed that students were unaware that there were tutorials on use of search tools (12/57.1%), GST courses on use of the library (11/52.4%), availability of a citation guide (13/61.9%), using a library catalogue (online) (14/66.7%) and plagiarism software (13/57.4%). The students may not be aware of information literacy programmes like the provision of tutorials on use of search tools and the GST course on the use of library because these programmes are not made available to all students except upon request and the GST course on the use of library is embedded in the General Studies - Use of English course material. The majority of the student population were not aware of the plagiarism software because it was recently purchased and installed by the University. This could be another explanation for the students' low level awareness of the provision of the plagiarism software.

Table 4.19: Level of Awareness of Information Literacy Programmes in the University

Information Literacy Awareness Items	Aware*	Unaware*
Library Orientation Programme	18 (85.7)	3 (14.3)
Tutorial on using search tools to find possible sources	9 (42.9)	12 (57.1)
GST course on Use of Library	10 (47.6)	11 (52.4)
User education on the use of the library	17 (81.0)	4 (19.0)
Availability of citation guide	8 (38.1)	13 (61.9)
Using a library catalogue (online)	7 (33.3)	14 (66.7)
Availability of NOUN plagiarism software	1 (4.8)	20 (95.2)
Assistance on basis use of computer for information search	19 (90.5)	2 (9.5)
Availability of NOUN copyright policy	7 (33.3)	14 (66.7)
Availability of NOUN orientation document	10 (47.6)	11 (52.4)

* All figures in parenthesis are percentages

4.1.2.13. Level of Information Literacy in the National Open University of Nigeria

The results of the librarians' assessment as shown in table 4.20 revealed that in the library and in the course of their service delivery, the librarians confirmed that the provision of professional and friendly interaction of library staff members with library users (285.7) was amongst the highly

selected items that helped in facilitating the information literacy programme of NOUN. Though this is not a formal process, it has served as a factor in information literacy development. This was followed in descending order by competence of library staff (276.2), tutorial on search tools to find other sources (261.9), education on the use of the library (257.2) and assistance on basic use of computers for information searches (252.3). The other items that were assessed as not relatively as developed are the GST course on the use of the library (228.6), availability of a citation guide (228.6), appropriate number of library staff (223.9) and availability of NOUN plagiarism software (219.0). There is still a lot of work to be done in terms of developing practical steps towards information literacy development.

Table 4.20: Assessment of Level of Information Literacy Factors in NOUN

Information Literacy Factors	Getting better	Remain unchanged	Getting worse	Weighted score*
Professional and friendly interaction of library staff members with the users of library facilities	85.7%	14.3%	0.0%	285.7
Competence of library staff	76.2%	23.8%	0.0%	276.2
Tutorial on using search tools to find possible sources	61.9%	38.1%	0.0%	261.9
User education on the use of the library	66.7%	23.8%	9.5%	257.5
Library Orientation Programme	66.7%	23.8%	9.5%	257.2
Assistance on basic use of computer for information search	57.1%	38.1%	4.8%	252.3
Availability of NOUN orientation document	57.1%	33.3%	9.5%	247.4
Using a library catalogue (online)	52.4%	33.3%	14.3%	238.1
Availability of NOUN copyright policy	42.9%	47.6%	9.5%	233.4
GST course on Use of Library	38.1%	52.4%	9.5%	228.6
Availability of citation guide	28.6%	71.4%	0.0%	228.6

Information Literacy Factors	Getting better	Remain unchanged	Getting worse	Weighted score*
Appropriate number of library staff	42.9%	38.1%	19.0%	223.9
Availability of NOUN plagiarism software	33.3%	52.4 %	14.3%	219.0

* Weighted scores were computed in certain tables to highlight the extent to which the items were subscribed to by the majority of the respondents. This was done by multiplying the percentage of a specific response with the figures used to code the response and thereafter adding up all the responses for a particular item. The weighted score of the item with the highest value will be the dominant item in the scale.

4.1.2.14. Suggestions for the Implementation of Information Literacy

Librarians were requested to make suggestions on possible strategies that could be adopted for the implementation of information literacy and lifelong learning. The results of their responses in table 4.20 indicate that staff training; 9/42.9% was the major suggestion given by most of the respondents towards the implementation of effective information literacy and lifelong learning. The majority of librarians in the university library were obviously new in the profession and are not exposed to the practical ways of providing library services and therefore need training to be keep abreast of the information literacy delivery techniques. This is followed by creating awareness (8/38.1%), educating students (7/33.3%), producing a hard copy of orientation documents (6/28.6%) and having internet connection always (4/19.0%). Other suggestions that weren't very prominent among the librarian's responses were issues like having more human resources in terms of recruiting more of library officers (1/4.8%), easier access to library resources (1/4.8%) and involving librarians in developing GST course (1/4.8%).

Table 4.21: Suggestions for the Implementation of Information Literacy

Suggestions	Frequency	Percentage
Staff training	9	42.9
Creating more awareness	8	38.1
Educating students	7	33.3
Producing hard copy of orientation documents	6	28.6
Improving facilities	5	23.8

Suggestions	Frequency	Percentage
Having internet connection always	4	19.0
Introduction of GST course on use of library	4	19.0
Updating information	3	14.3
More human resources/library officers	1	4.8
Easy accessibility of library resources	1	4.8
Transfer of successful models	1	4.8
Involving librarians in the development of GST course	1	4.8
Total	21	100.0

4.2 Results from Qualitative Instruments

The qualitative component of this study deployed the use of the interview and the document analysis method of data collection. Stangor (2011:15) described qualitative research as descriptive research that is focused on observing and describing events as they occur, with the goal of capturing all of the richness of the everyday behaviour. The interview target population was the deans of the schools who are the academic heads of the schools and coordinate the activities in the school. This interaction enabled the researcher to understand the ideals, policies and practices in their schools regarding the development of information literacy and lifelong learning skills.

Document analysis was the second qualitative instrument that was used for data collection. The two research instruments were used simultaneously because of their ability to cross over and complement each other. The data from these instruments was manually coded and analysed as shown in the sections below.

4.2.1 Results from Structured Interviews

The results of the structured interviews are presented in this section in a similar order as the questionnaire. A thematic method of data analysis was used for this qualitative strand of the study. Thematic analysis is a method for identifying, analysing, and reporting patterns (themes) within data. It minimally organises and describes the data set in (rich) detail. They are presented under the following themes: information literacy instruction, availability of facilities for information literacy, information literacy programme, assessment of competency level of NOUN students, level of collaboration between the deans of schools and the library professionals, the challenges

associated with information literacy education and strategies and best practices for information literacy for lifelong learning.

The deans of the seven schools domiciled in the University were targeted for the interview phase of the study. The school of Agricultural Sciences was just being constituted at the time of the data collection phase of the research so the researcher could not interview the incoming dean. The remaining six deans were available and from this qualitative strand of the research the response rate and representativeness were accurate. Before the commencement of the interview session, the researcher ensured that the interview environment was conducive and that no interference was present during the interview.

The interview questions were asked in a chronological order as attached in Appendix III. The deans of the schools were asked to indicate their professional rank and, from the information gathered, they indicated that all of them were professors. The interview schedule was divided into five sections and the responses are displayed below.

4.2.1.1 Information Literacy Facilities/Reading materials

When asked if there were facilities/reading materials regarding information literacy instruction in their respective schools for students' use, the deans' response was in the negative. Some of the deans affirmed that course materials written by course writers (academic staff) were the only documents in their school that could serve as an information literacy document for students taking programmes in their school.

Dean of School of A:

“Course materials are the only material in the School of Arts and Social Sciences that can serve as an information literacy document.”

Dean of School E:

“There is a general course material that is expected to be developed with regards to information literacy.”

Dean of School of M:

“Induction/Orientation programmes conducted the school of management sciences and the materials prepared served as the as information literacy documents for the students in his school.”

Dean of School of L:

“There is none.”

Dean of S:

“The closest document that could serve as an information literacy document is the course material.”

Dean of H:

“The only material that we can say is an information literacy document are course materials.”

4.2.1.2 Availability of Information Resources towards IL Development

In view of the question regarding the availability of information resources for information literacy for students towards information literacy development the following were the responses:

Dean of School of L:

“Yes there is legal and ethical page where students are made to attest that their work is not a plagiarized work.”

Dean of School of Management Science

“Orientation during the research writing and the project guide could serve as an information literacy resource.

Dean of School of E:

“All student’s projects have a declaration page which serves as a legal and ethical page where students were made to attest that their work was not plagiarized.”

Dean of School of Arts:

“At the moment, there are no information resources available for information literacy”

Dean of Social Science:

“There are no resources in the school for students for information literacy development”

Dean of Health Sciences:

“There are no information resources towards IL development in their schools”.

The findings of the study indicated that this page wasn't sufficient to serve as an anti-plagiarism check for students and for information literacy development. From the response to the question in section B, it was deduced that there were no facilities available for students' use in relation to information literacy development in all the schools.

4.2.1.3 Information Literacy Programmes

The respondents were asked to give different information literacy programmes that were in place to support and promote information literacy for lifelong learning in their schools, while five deans out of the six that responded posited that there were no information literacy programmes.

Dean of School of L:

“The only thing that looks like an information literacy programme in my school is the reading list provided for the students by the faculty”

Dean of School of Management Science

“There is no information literacy programme that I know of”

Dean of School of E:

“There is none”

Dean of School of Arts:

There is nothing like an information literacy programme in my school in the meantime, maybe in the future”

Dean of Social Science:

“I am not aware of any information literacy programme in my school”

4.2.1.4 Information Literacy Curriculum Integration

In section C, the respondents were asked if there were courses in their schools' curriculum that reflected an information literacy programme for the students of their schools. In response to the question, all the six respondents interviewed reported that some courses in the schools' curriculum had elements of information study and management of information but they were not formal or officially pronounced.

Dean of School of L:

“Some courses that the students offer reflects a bit of IL in its curriculum”

Dean of School of Management Science

“There were no courses that reflected information literacy programme in its school's curriculum.”

Dean of School of E:

“Information literacy is a part of the life of a student, it is expected that it should be part of the students curriculum”

Dean of School of Arts:

“Most of the courses that the students offer have some elements of IL in their curriculum though they may not be as pronounced as an IL course will be”

Dean of Social Science:

“There are a number of courses that reflect the use and management of information”

It was also deduced that there was no form of information literacy integration curriculum in the University.

4.2.1.5 Assessment of Information Literacy Programme

From the responses from the deans of the schools interviewed, there were no information literacy programmes that are put in place to support, promote and create awareness of information literacy for lifelong learning and no methods that were put in place to assess or measure the information literacy competency level of the students in the National Open University of Nigeria.

Dean of School of L:

“There are no IL programmes so you do not expect to have methods of assessment”

Dean of School of Management Science

“There are no information literacy programmes that are put in place to support, promote and create awareness of information literacy for the students in my school”

Dean of School of E:

“There are no IL programmes and no methods of assessment either”

Dean of School of Arts:

“None of these exist”

Dean of Social Science:

“There are no officially pronounced IL programmes so we cannot assess students on IL skills development”

4.2.1.6 Basic Understanding of Information Literacy

To have a grasp of the level of understanding of the deans with regards to these concepts, the deans were asked to explain in their own words their level of understanding of the relationship between information literacy and lifelong learning. From their responses, all the deans of the schools had some basic idea of the two concepts but it was also evident that the understanding was not in-depth and professional. These were their responses towards the question above:

Dean of School of A:

“Information literacy is related with learning and learning is for life.”

Dean of School of E:

“Information literacy is when students know that a particular resource is the one that they need.”

Dean of School of M:

“Learning is from birth to death.”

Dean of School of L:

“Information literacy is using information.”

Dean of S:

“Information literacy is the use of technology for information needs.”

Dean of H:

“Information literacy is learning with information and it is for life.”

4.2.1.7 Level of Collaboration between Deans and Librarians

The respondents were asked if there was any form of collaboration and interaction between the deans or academic staff and the librarians. Some of the deans answered in the affirmative while others indicated that there was little or no level of interaction between the librarians and the schools. When asked their opinion on the level of collaboration between the deans of schools and the library professionals, these were their responses:

Dean of School of A:

“Yes there is some form of collaboration in the school between librarians and the academics.”

Dean of School of E:

“The level of collaboration is improving and getting better.”

Dean of School of M:

“Yes the collaboration between academics in the school and the library is highly commendable because they provide library services like sending relevant and up to date books to equip library and recently established an e-library for the school.”

Dean of School of Law:

“There is no form of collaboration between the academics in the schools and the academic librarians.”

Dean of Sciences:

“There is level of collaboration with librarian and the school of sciences, the librarians helped in setting up the school library and assisted with provision of information material.”

Dean of H:

“The university library just set up the school library recently and nothing much has been done yet, so far there is a growing level of collaboration between the school and the librarians.”

Out of the six respondents, five reported that there was a level of collaboration between the school and the library staff and the relationship was commendable.

In summary, the deans indicated that the basic interaction between the library and the schools was that the professionals in the university library set up and established the school libraries and from time to time sent relevant and up to date books to equip the libraries.

4.2.1.8 Challenges Associated with Information Literacy Education in NOUN

The researcher aimed to find out about the challenges associated with the development and improvement of information literacy education. When asked about the challenges militating against effective information literacy education in the National Open University, all the deans indicated that the challenges they were facing were centred on inadequate physical and financial resources, lack of electricity, budgetary issues and bureaucratic bottlenecks surrounding the implementation of policies in the University.

Dean of School of A:

“Amongst other things, the bureaucratic bottleneck surrounding the implementation of policies in the University is a strong challenge that will be associated with information literacy education.”

Dean of School of E:

“Information explosion and insufficient infrastructure or facilities are common challenges to information literacy development.”

Dean of School of M:

“Physical Resources and Human Resources, especially developing the professional capacity amongst librarians and other academics.”

Dean of School of L:

“Power, Traffic, and Tight Office space are visible challenges associated with information literacy.”

Dean of S:

“Insufficient resources and financial constraint affecting information literacy.”

Dean of H:

“Ignorance and lack of policy advocacy is a challenge affecting information literacy development.”

4.3.1.9 Strategies for Information Literacy and Lifelong Learning in NOUN

The following are the responses of the deans on the recommendations for information literacy and lifelong learning in NOUN.

Dean of School of A:

“The University needs to put policies in place to promote the development of information literacy skills in students in the University.”

“Librarians should collaborate more closely with the academic staff on the information literacy development process.”

“More training and orientation should be conducted towards the information literacy process.”

Dean of School of E:

“Each study centre should have copies of the course material when they can use where necessary or get from the library.”

“Much attention should be given to the concept of information literacy development.”

“There has been a strong collaboration and interaction between the library and the school of Education especially during the accreditation.”

“There should be means of interaction between the library & its users.”

“Library to do more of educating the University community and training on information literacy.”

Dean of School of M:

“Induction/orientation programmes conducted by the school of management sciences and the materials prepared served as the as information literacy documents for the students in his school.”

“The library staff in the headquarters should educate other staff and students in the other study centres on information literacy matters.”

Dean of School of L:

“There is a need for the improvement of the information literacy practices for lifelong learning in the National Open University of Nigeria through conferences, regular meetings and library programmes.”

Dean of S:

“More effort should be channelled towards integration of information literacy in the University’s curriculum.”

Dean of H:

“The University should develop more information literacy practices to facilitate lifelong learning.”

“The University management should embark on educating and training library staff on information literacy development.”

Amongst the responses the most repeated recommendation for best practices for developing information literacy to facilitate lifelong learning was an improved means of interaction between

the library staff and its users. This is very necessary especially from the results of the analysis gained from the questionnaires and the interview.

4.2.3 Document Analysis

Document analysis is a systematic procedure for reviewing or evaluating documents both printed and electronic (computer-based and internet-transmitted) material. Some of the documents accessed in the process of this study were print as well as electronic. It was of importance to conduct some documents analysis process after the interviews in order to ascertain the validity of the data collected provided in interviews and questionnaires. The analysis was done using the designed checklist that was developed by the researcher.

University documents were used to collect and analyse information about the university library and the academic schools. These documents included official documents such as the blue print of the University, the strategic plan and the academic plan of the University. The university library’s website and external documents used in the provision of information sources were also consulted in this process. The researcher reviewed every line, phrase, sentence, and paragraph segments from the documents and other sources to gather data and code for proper analysis. Below are comments which were garnered from the documents analysed.

Table 4.22: The Summary of Findings of Document Analysis

S/N	Evaluation Items/Documents	Comments/Analysis
1	University website/Library website	The University library’s website which is being restructured does not contain much information about the information literacy and lifelong learning for its students. Some parts of the library website have some information (on) literacy related issues but does not contain very important aspect(s) such as library guides, research tutorials and library use tips which are vital aspects of educating students on information literacy.
2	Orientation/Training Manual	This document contains vital information that promotes the concept of information literacy and lifelong learning amongst students. It educates the students on the available facilities in the library, promotes user education and encourages students on the developing their information literacy skills.

3	Annual reports	These documents which is produced yearly chronicles the events and achievements of the university library and educates the users on the available facilities in the university library including the print and the electronic resources.
4	University library/school library attendance register	This document keeps records of library use and also serves as a yardstick to measure the frequency of use of library materials.
5	Academic Brief and 2012-2017 strategic plan	This document showcased the vision, mission and objectives of the university library, exposing users to the activities and projections of the university library for the next five years.
6	National Open University Courseware (Good Study Guide)	This is the courseware repository of the University where all courses written about the University are domiciled. The courses on research methods which expose students to the use of information sources are domiciled here. The Good Study Guide which is the course that is designed to teach student(s) on the use of the library is not comprehensive enough to educate the students on the essential requirements of promoting their information literacy and lifelong learning skills. The course material on the use of the library (the Good Study Guide) is currently being reviewed and coincidentally the researcher is on the review team and has proposed an inclusion of a prominent part of library instruction and information literacy as part of the review process of the document (memos attached)
7	The University's copyright act.	This document illustrated and exposed the rules guiding research practices and brings to light the essentials guiding copyright and research writing.
8	The University's blueprint	This is one of the oldest documents in the University and it highlighted the initial plans of the University regarding the use information which is directly related to improving the information literacy skills of the students of the National Open University of Nigeria.

The table above highlighted some of the observations and deductions made about the state of information literacy and lifelong learning as was gleaned from the university documents. It can be deduced from table 4.22 that the issues of information literacy and lifelong learning for students in the National Open University are basically in theory and need to be translated into concrete and practical implementation.

4.3 Summary

This chapter presented the data collected from three different categories of instruments at the National Open University of Nigeria. This data analysis was presented in line with the objectives of the study. Data has been presented with more emphasis on the descriptions provided by the respondents from the questionnaires and participants from the interview. Validation of the information gathered was done through document analysis. The study affirmed that the most available information literacy materials in the University were course materials and the university library website. These resources were also the most frequently used by students. The students felt that print journals were not prominently available as an information literacy material in the University. Contrary to the finding of the students, the outcome of the librarians' assessment revealed that journal articles (online) and databases (361.9) were the mostly adequately provided resources at the university library; these were followed in descending order by periodicals (online) and course materials. The study ascertained that the students used the library resources for academic tasks and some of them used it for recreation and non-academic purposes. A large number of the students did not state specifically the most frequent reason for using the Library resources.

The findings indicate that students were aware of the use of the library section that is embedded in their general studies course. They were also aware of the basic use of computers, and the orientation programme conducted by the University for students who just joined the University. The students weren't aware of the plagiarism software and the availability of a citation guide as information literacy material in the University.

The students indicated that they had a high competency level because they felt they handled successfully the academic tasks assigned to them in the past in the course of their studies. The study showed that the provision of the assistance on basic use of computers for information searches was a major factor in facilitating information literacy at the university library and the services was getting better.

Responses of librarians in table 4.20 indicated that staff training (9/42.9%) was the major suggestion given by most of the respondents towards the implementation of effective information literacy and lifelong learning. The librarians were also concerned about creating more awareness

of the available information literacy programmes, educating students and making available the orientation documents for students' use.

It was deduced that there were no facilities available for students' use in relation to information literacy development in all the schools and there was no form of information literacy integration curriculum in the University.

From the responses from the deans of the schools interviewed, there were no information literacy programmes put in place to support, promote and create awareness of information literacy for lifelong learning and no methods that were put in place to assess or measure the information literacy competency level of the students in the National Open University of Nigeria. The study revealed that the only form of academic collaboration was the interaction between the librarians and the academics in the different schools during the school library set up process and also periodic visits to reorganise or equip the library.

The documents analysed stated the development processes towards information literacy. The annual report, the blue print and the strategic plan of the University had traces of information literacy development amongst them. The study revealed that the challenges militating against effective information literacy in the National Open University were human resources, financial resources and lack of electricity. The most repeated recommendation for best practices for developing information literacy to facilitate lifelong learning was an improved means of interaction between the library staff and its users. The next chapter presents a report on the interpretations and discussion arising from the data.

CHAPTER FIVE

INTERPRETATION AND DISCUSSION OF FINDINGS

5.0 Introduction

Chapter five presents the discussions relating to the findings of the study. The main aim of the study was to assess the level of information literacy skills among students at the National Open University of Nigeria. The previous chapter presented the analysis and findings of the study. This chapter interprets and discusses the findings of the study as presented in chapter four.

An interpretation of results means that the researcher draws inferences from the results for the research questions, hypotheses, and the larger meaning of the results (Creswell 2009:152). Data interpretation is that part of the research process where the researcher looks closely at the data found and explains these findings, whilst also comparing them to the findings and explanations put forward by other researchers or writers (Blaxter, Hughes & Tight 2006:219). Therefore, the researcher's interpretation of the findings are compared with the findings from previous studies and explains the findings from the present study. The interpretation and discussion were conducted in line with the objectives and research questions of this study and in relation to the data presented in chapter four and literature reviewed in chapter two.

5.1 Types of Information Literacy Materials Available in NOUN

The National Open University has different study centres in the thirty-six states of the federation. Kpolovie and Obilor (2014:033) reported that study centres are resource places where students pick up course materials and other study materials, as well as interact with instructional facilitators, tutors, student counsellors, study centre directors and with other students. In its development plan, the National Open University proposed to establish seven hundred and seventy-one (771) study centres throughout the nation where distance learners would learn, submit and collect marked assignments and use information technology (ICT) facilities for varieties of learning purposes (Benedict 2011:np). Presently, the University has 70 study centres located in the six geo-political zones of the country. The first objective of this study was to identify the types of information literacy materials (resources) available at the National Open University of Nigeria.

5.2 Information Resources for Information Literacy

The results in table 4.6 of the study revealed that the information literacy library facilities available at NOUN were course materials and information from the university website. The reason for the result is aligned with Okonkwo (2012:222), who reported that, at the initial phase of the establishment of the National Open University of Nigeria, the National University commission's rule was that in order to earn a full accreditation status, each programme must have 70% of its course materials available and must score at least 70% from each of the core areas of which course materials was 20%. NOUN's programmes were expected to follow the due process of accreditation of open and distance learning (ODL) programmes in Nigeria and the process of developing course materials was a necessity. This condition was one of the strong reasons why the University intensified efforts to make available course material for students. NOUN's print course materials comprise of a self-study course book and its study guide. Most of the course materials are produced in hard copy, some on CD, while some are available both in hard copy and on the Web. NOUN course materials are developed from scratch; the materials were developed in-house, and the course content was aligned with the aims and objectives of the programmes (NOUN, 2009). This process makes the course material customised material for the National Open University students.

Similar to this study, course materials of the Open University of Hong Kong distance learning programmes are provided in selected public libraries for public reference and the collection is being updated on a regular basis by the University. According to Murray, Pérez, Geist and Hedrick (2012) in a study undertaken in a regional university in the United States where online asynchronous courses are conducted, all course materials and associated resources are provided to the students within a university-supported learning management system accessible via the Web.

The provision of course materials by distance learning institutions is a common instruction delivery tool that bridges the learning gap for distance learners.

Oriogu (2015) stated that the availability of information resources is the presence of information in both print and non-print format. Thus, information resources are print and electronic materials that can be sourced and accessed manually or electronically by users. It is also the information carrier materials which could be print or in electronic form. The respondents in the qualitative segment were asked during the interview to give details of the types of information literacy materials available in their school for students in the National Open University of Nigeria and they

confirmed that there were no information literacy facilities available in their schools. From the study it was deduced that there were no facilities available for students' use in relation to information literacy in all the schools. Bitagi and Udoudou (2013) observed that the availability of all forms and types of information resources in academic libraries are imperative if these libraries are to meet the information needs of researchers in their parent institutions.

5.3 Use of Resources

Cox and Janti (2013) identified library use as an activity which measures the worth of an item to a library or information system. He added that the concept of 'use' in the library is essential in guiding the collection development effort of the library. This objective was pursued further by assessing the extent to which the available resources were put to use by the student respondents and the purposes for which these students used the resources in the library.

5.3.1 Extent of Use of Available Types of IL Library Resources

According to Motiang (2014:41), a library plays an important role in providing information services and resources to assist users in their studies and research activities. It possesses information in the form of books, periodicals, audio-visual and electronic media. Information resources are information bearing materials that are available in different formats in libraries and outside the libraries. Most evaluative studies on library use have always concentrated on students' use of academic libraries (Amkpa 2000, Ugah 2007 & McCarthy 1995).

Amongst the information literacy materials provided in the library such as course materials, library catalogue (online), reference material, E-books and others, the result from this study revealed that the most frequently used information literacy resources in the university library were the course materials and the university library website. In an open and distance learning environment, course materials are considered to be information literacy material and at the same time one of the instructional delivery tools. Aijaz and Malik (2007) observed that examples of instructional delivery methods are print (course materials), audio visual materials (radio, television) and others. Burns (2011) expanded these instructional materials to include print based models, audio based models, televisual models, web-based models and mobile models. The expansion extends to the different formats of the course materials which was the most available information resource in the library. From the description above, in this study students are more comfortable using the course

material because it serves the dual purpose of being an IL library material and an instructional material.

Different authors such as Bury (2010) and Head and Eisenberg (2009) have written extensively on the use of academic libraries by students. Nwezeh and Shabi (2011) in their research attempted to find out which library materials students frequently used. Their finding showed that 88.9% of the respondents used library books while 77.8% used journals. 55.6% read newspapers in the library, while government publications, indexes and abstracts and microforms are used by only 60 (13.3%), 50 (11.1%) and 2 (0.4%) of the respondents respectively. This is totally different from the current study in table 4.7 where customised material and websites were the most frequently used. The difference is possibly because of the proliferation of internet resources and the development of course materials in the National Open University of Nigeria.

There are many factors associated with undergraduate usage or non-usage of academic libraries. Course materials are the only instructional materials that are peculiar and designed specifically for the National Open University students. They are customised for the National Open University students alone and can be adapted only with permission by other institutions to fit their own purpose. Students are comfortable using these materials because they are written to address their needs and in each course material is a section which helps for practice assessment known as TMA (tutored marked assignments) and student really use this for their academic studying. This is very similar to the study conducted in the University of Botswana in 2007 where undergraduate students were found to prefer lecture notes and handouts and were found to enjoy information seeking from: an electronic environment; finding information quickly and easily, finding interesting related articles as well as online browsing for relevant articles and finding that librarians are very pleasant and helpful when asked for assistance.

In a more recent studies by Abosede and Ibikunle (2011), Oluwatobi, Ehioghae, Aluko-Arowolo and Onasote (2014), Nkamnebe, Udem, Nkamnebe (2014), their findings revealed that respondents utilise the online database of the university more than any other information resources available in the library. This result is in consonance with this current study on the use of resources in the National Open University of Nigeria. Students also indicated that information on the university's website was another mostly utilised resource. Open and distance learning students are comfortable using online resources because they can access the materials from remote locations.

5.3.2 Reasons for using the library

In the literature review, according to Yusuf and Iwu (2010:1), the academic library is the nerve centre or the hub around which scholarship revolves. It is an indispensable instrument for intellectual development. Considering the importance of the library, the study went further to assess the reasons for which the respondents use the library. In this study, the results in figure 4.3 indicated that the majority of the students use the library for academic work, a lesser number use the library for conducting researches while 33% of them use it for recreation and non-academic purposes. A large number of students did not specify the most frequent reason for using the library resources.

At the initial stage of a student's academic experience in the University, the students used the library more for academic purposes such as solving their tutored marked assignments, reading for their examinations or gathering information for their seminar or fieldwork. This clearly explains that the students use the library and its facilities mainly for their academic purposes. Similarly, many authors have revealed that the majority of students use the library mainly for academic purposes. Kakai, Ikoja-Odongo and Kigongo-Bukenya (2004:22) in their findings on the reasons for undergraduates searching for information in Uganda, revealed that the main information demands that led undergraduate students into searching for information were those that had to do with academic information, e.g. information for assignments, projects and examinations. Tella, Owolabi and Attama (2008), Holman (2011) Abosede and Ibikunle (2011) and Haddow (2013) in their studies of academic library use found that mostly young students use library resources frequently for academic purposes. According to Rubina (2013), the results in her study revealed that respondents frequently used the library for class assignments, reading library books and examinations preparation. On the other hand, she stated that sometimes they used the library to borrow library books, consult reference materials, for photocopying, to read newspapers, and for recreation purposes.

5.4 Level of Awareness of Students

It was necessary to find out the adequacy of information resources in relation to information literacy skills and also determine the information resources that the students were aware of and used for their academic programmes.

Availability of library resources will not produce any positive effect in the students' academic results if the students are not aware of the resources that have been provided for them and do not utilise them for academic purposes.

5.4.1 Adequacy of Information Resources in Relation to Information Literacy Skills Development

Baro (2011:550) posited that the ultimate goal of a comprehensive information literacy programme is to inculcate in the individual the ability to recognise when information is required and to teach them to understand how the information is organised, and how to access it. In this study, the Deans in the qualitative arm of the study were asked to indicate the different information literacy programmes in their schools that were put in place to support and promote information literacy for lifelong learning. The five deans out of the six in section 4.2.1.3 that responded posited that there were no information literacy programmes. The Dean of School of Law indicated that in his school, the only information literacy programme available was the development of the reading list from the faculty and not from the library.

From the list of standard information literacy resources, it was obvious that the provision of the reading list was not adequate for the school of Law as adequacy of resources is certified with abundance of resources for student's use. The reason for this inadequacy is because individual schools in the University make efforts to organize their school information literacy programme and the University is yet to set up to support and promote information literacy for lifelong learning. There is need for a variety of information literacy programmes to be developed to support and promote information literacy for the students in the University.

Other institutions have made efforts to institute information literacy in their programme. Banks and Svencionyte (2008) described two programmes the John B. Cade Library developed for freshmen. Relevant literature pinpoints the need for a pedagogic framework for delivering effective information literacy programmes and embedding the use of the information literacy (Carder, Williamham & Bibb 2001; Cooney & Hiris 2003; Dennis 2001; Doherty, Hansen & Kaya 1999; Korobili, Malliari & Christodoulou 2008).

5.4.2 Level of Awareness of Information Literacy Programmes in the University

The result of the assessment from the quantitative instruments revealed that most of the students' level of awareness was through the orientation programmes, user education on library use and assistance on use of computer for information search. In the National Open University some study centres conduct orientation programmes for the students in their centres but these programmes aren't wide spread across other centres and this makes for an imbalance in creating awareness for information literacy in the University. The result in table 4.9 reveals that most of the students are aware of resources and services of libraries and most of the students use them to consult their course material.

It is also evident to note that the orientation programme conducted in the study centres are not in conjunction with the schools and the schools do not have a role to play in this programme and are not involved in any of its processes. Also, from the responses derived from the deans of the schools interviewed in this study, there were no information literacy programmes that were put in place to support, promote and create awareness of information literacy for lifelong learning and no methods were put in place to assess or measure the information literacy competency level of the students in the National Open University of Nigeria. This result is supported by an earlier study conducted by Igwe and Ndubuisi-Okoh (2014) that assessed the level of IL awareness, perception and skills of students of National Open University of Nigeria. The IL assessment test showed that more students lacked IL skills and a recommendation was made towards the integration of IL instruction into the university's curriculum.

In a different study, Babalola (2012) examined undergraduate students' awareness of IL at Babcock University Ilishan-Remo, Ogun State, Nigeria and found out that most students were not aware of the library resources available to them and were unable to understand behaviours constituting plagiarism. Haji, Mwitumbe and Omar (2014) commented that awareness of information literacy and opportunities for students to participate in user instruction were still minimal in the universities they surveyed. This is very similar with the case of the National Open University where students are not fully aware of the information literacy programmes or facilities in the University.

Kumar, Hussain, Fatima and Tyagi (2010:671) observed that users' awareness about the library services is a prerequisite for proper utilisation of the library and its resources. Togia and Tsigilis

(2009) confirmed that lack of awareness of the availability and the potential of certain resources seems to be a serious problem associated with underutilisation of resources. According to SCONUL (2011), information literate researchers demonstrated an awareness of how they gather, use, manage, synthesise and create information and data in an ethical manner and will have the information skills to do so effectively. This is the expectation of every formally organised information centre and the National Open is not an exception.

5.5 Information Literacy Competency Level of NOUN Students

Competency according to Alberta Education (2010) has to do with knowledge, skills and attitudes which are drawn upon and applied to a particular context for successful learning and living. Jianjun (2001:25) explained that information literacy competency standards are considered to be the objective of information literacy instruction, the basis of information literacy assessment, and the foundation of the establishment of the information literacy education system.

Lau (2006) opined that information competencies are key factors in lifelong learning and are the first steps in achieving educational goals. The objective of the study was designed to determine the competency level of the students of NOUN on information literacy. Based on the data gotten from the student's questionnaire in section 4.1.1.13, the majority of the respondents indicated that they had a high level of competence of information literacy while a few had a low competency level. The response to this question could be seen from the perspective of the students with the characteristics of adult learners. Moore and Kearsley (1996) indicated that most distance education students are adults and sometimes they feel confident or uncertain about their information needs thus causing them to want more independence or need more guidance on a particular issue. In this case, the students are confident about their competency level and feel they have attained a certain level of IL competency.

To confirm the findings of this study, a lot of research has been revealed the competency level of the students in different institution. To buttress this point, Baro and Fyneman (2009:667) observed that, as in other studies, the undergraduate students in the Faculty of Social Sciences in Niger Delta University did not know their information needs, where to get the information, how to source for the information, analyse and organise the information, but felt they had a high information literacy competency level. Ilogho and Nkiko (2014), in a study to examine the effectiveness of information

literacy programmes and the student research skills at five private universities in Nigeria, found that students had a low level of information literacy skills. In different literature, Baro and Eze (2015) revealed a knowledge gap in the area of information literacy competencies of students in Nigeria.

Babalola (2012) concluded that the students have a low level of IL competence, capable of hindering their full exploitation of the information resources. They claimed not to need IL to conduct academic activities, translating into possible poor quality academic work. This corroborates with Islam and Tsuji (2010)'s finding that the IL skills of their respondents were limited. Most students in Nigerian universities have been found to lack the sophisticated skills that are needed to exploit the university libraries' information resources both print and online (Baro & Fyneman 2009). Anderson and Bull (2014) reported on a survey exploring the information literacy skills and practices of students at Ashesi University in Ghana and noted that many students lacked knowledge of important information resources and had trouble formulating effective searches.

The absence of IL competency in an institution is detrimental to the academic progress of the students of the university. Information literacy as earlier noted by Kimani (2014) is necessary for undergraduate students during their years in the university.

5.5.1 Assessment of IL Competency Level of Students

According to Choinski, Mark and Murphey (2003:563), "Assessing students' learning outcomes means describing and measuring what students should 'know, think or do' when they have completed a particular academic program". Conducting assessment is an important method of determining if the objectives of general education are being realized (Jacobson & Mark 2000). Harrison and Newton (2010) posited that there is a strong relationship that existed between performance on the information literacy skills assessment and students' academic performance throughout their degree programme. Assessment of student learning is crucial to the academic institution of the 21st century.

With regards to the statement above, this study made an attempt to inquire from the heads of the schools if there were programmes or assessment mediums in place for the development of information literacy in their schools. From the responses from the deans of the schools interviewed, there were no information literacy programmes that were put in place to support,

promote and create awareness of information literacy for lifelong learning and no assessment methods that were put in place to assess or measure the information literacy competency level of the students in the National Open University of Nigeria.

5.5.2 Level of Information Literacy Development

Another perspective of this study was towards finding out the level of information literacy development in the University from the viewpoint of existing information literacy factors, integration of IL in the curriculum, basic understanding of information literacy and level of collaboration between the deans and librarians.

5.5.3 Information literacy facilitation factors

According to Ojedokun (2007:9), “information literacy skills acquired during the tertiary education training are very useful for knowledge-based development and lifelong learning”. While assessing the factors facilitating information literacy development, the results of the study clearly showed that the provision of the assistance on basic use of computers for information searches by librarians was a major factor in facilitating information literacy development at the university library. Citing several researchers, Henri (2001) commented that the development of information literacy in schools is predicated on the belief that academics are information literate, that information-processing models or approaches inform their teaching, and that they apply higher-order thinking skills when undertaking complex information tasks.

Similar to this study, it has been observed that some factors facilitating information literacy in university libraries in Nigeria are mainly library tour/orientation sessions even though it has been confirmed that this method is not sufficient to transfer IL skills to the students. Baro & Zuokemefa (2011:562) observed that the GST courses, such as “Use of English” which are integrated into the curriculum by nearly all universities as compulsory credit earning courses, are factors that help equip students to function effectively in this digital age.

5.6 Integration of Information Literacy

According to Igwe and Ndubuisi-Okoh (2014), integrating and contextualising information literacy into the university curriculum is about building skills (‘scaffolding’) for independent and lifelong learning in a systematic way throughout a student’s academic career. Duncan and Varcoe (2012) emphasised the value of introducing an information literacy curriculum. They reported that

the curriculum would address the following components in a programme: pedagogy; skills/knowledge levels; delivery models; human resources; underlying characteristics of information literacy programmes; and the benefits/outcomes for the student and institution. Ranaweerag (2010:73) posited that integration of information literacy into curriculum is accepted as the best way to implement the information literacy programmes in order to achieve the best results.

Gyimah (2011:34) observed that information literacy instruction programmes in tertiary institutions have taken a variety of forms such as stand-alone courses or classes, web-based tutorials, course-related instruction, or course-integrated instruction. Previous articles have argued whether information literacy should be taught as a separate unit or integrated into the curriculum. Most authors seem to agree that information literacy can be integrated into the subject areas (Kemp 1999; Joint & Kemp 2000; Town 2002:83-103). A blended approach – which pairs online and face-to-face instruction – offers precisely these kinds of opportunities for effective scaffolding learning (Lapidus 2012; Usova 2011; Kraemer, Lombardo & Lepkowski 2007).

The Deans in Section 4.2.1.4 were asked if there were courses in their schools' curriculum that reflected information literacy programme for the students of their schools. In response to the question, four respondents interviewed reported that some courses in the school curriculum had elements of information study and management of information but they were not formal or officially pronounced. The director of the School of M openly responded that no course reflected an information literacy programme in its school curriculum. From the documents analysed, it was highlighted that within the Good Study Guide course is a section that describes the process of the use of the library and how to develop reading skills as a student. This can be interpreted to mean that there is little integration of information literacy in the university curriculum.

Contrary to the findings in the present study, in a study conducted on undergraduates in Nigeria, Baro (2009) observed that the respondents indicated that IL skills were integrated into the curriculum. Similar to this study, other higher institutions in Africa have made several attempts in the past towards the integration of information literacy. Yeboah (1999) describes how librarians in the University of Botswana collaborated with lecturers in the Biological Science Department and planned the syllabus, timetable, and logistics for making courses on information literacy skills for 3rd and 4th year students. Badger (2014) discussed the various ways in which information

literacy was incorporated into the curriculum at the University for the Creative Arts at Canterbury. In South Africa, the Library and Information Association of South Africa (LIASA) had started to address how best to lobby for the integration of IL in the curriculum. Professional librarians suggested that information literacy should be integrated within different courses and they emphasised that if students do not perceive the relation between information literacy and the academic course, they find IL irrelevant and lose interest (Aharony and Bronstein 2014:113).

5.6.1 Basic Understanding of Information Literacy

Information literacy is becoming increasingly more important in our world that is rapidly evolving through the growth and proliferation of technological and information resources (American Library Association 2000). Many definitions of information literacy (IL) have emerged since the term's inaugural use in 1974. Various authors have described IL as a requisite for lifelong learning (Candy 2002). Others have described it as a natural extension of the concept of literacy in our society (Bruce 2002; Stern 2002). Several authors agree that the information-literacy movement has evolved from precursors such as library instruction, bibliographic instruction and user/reader education (Snaveley and Cooper 1997; Bruce 2000; Seaman 2001; Ojedokun 2007).

In order to establish a point of reference, the respondents were asked in the qualitative strand of the study to define the concept of information literacy and to explain in their own words their level of understanding of the relationship between information literacy and lifelong learning. From their responses, all the deans of the schools had a basic idea of the two concepts but it was also evident that their explanations were not in-depth and professional. Elements such as recognising/identifying information needs, finding, locating, evaluating and use of information were not common in their definitions. It is not surprising to see variations in the definitions as there is no commonly accepted definition of information literacy amongst academics in the University.

The deans did not seem to have an elaborate understanding of the concept of information literacy and the limited descriptions they gave were on diverse aspects. Their definitions did not tally with the popularly accepted definition by the American Library Association (1989) which simply defined IL as “a set of abilities requiring individuals to recognise when information is needed and have the ability to locate, evaluate, and use effectively the needed information.”

In a similar research, Duncan and Varcoe (2012) observed that the faculty members' definition of information literacy focused primarily on the skill components and not the higher level knowledge components. Amongst the definitions, some faculty members reduced the definition to conducting research and getting information and neglected to mention other steps of the research process, such as determining the information needed, evaluating sources, and the appropriate or legal use of information. Some faculty members expressed the importance of evaluating sources in their definitions.

Information literacy and lifelong learning have a strategic, mutually reinforcing relationship with each other that is critical to the success of every individual, organisation, institution, and nation-state in the global information society. These two concepts should ideally be harnessed to work symbiotically and synergistically with one another if people and institutions are to successfully survive and compete in the 21st century and beyond (Lau 2006:12).

5.6.2 Collaboration between Deans and Librarians

Faculty-librarian collaboration has been shown to be the most effective means of developing a relevant, timely programme of information skills training (Lampert 2005; Paglia & Donahue 2003) that is more than 'just one shot' at a teaching session (Artman, Frisicaro-Pawlowski & Monge, 2010). "Incorporating information literacy across curricula, in all programs and services, and throughout the administrative life of the university, requires the collaborative efforts of faculty, librarians, and administrators" (Association of College and Research Libraries 2000:4).

Putting an information literacy/lifelong learning programme in place cannot be done exclusively by librarians in libraries. This enormous task is the responsibility of all the learning community: teachers, faculty, students and society in general. A team must be formed, and partners identified who can work with the librarian (Lau 2006:13). Successfully integrating information literacy requires the feedback of academics (Derakhshan & Singh 2011:219).

In the National Open University of Nigeria, there is little or no level of interaction between the librarians and the schools. The level of collaboration between the librarians and academics is dependent on each of the schools. To arrive at a successful IL programme integration and coordination, librarians need to work in collaboration with their academic counterparts. Several authors (Idiodi 2005; Edzan 2008; Lwehabura 2008; and Baro & Fyneman 2009) have been

advocating for collaboration between librarians and faculty to develop and deliver IL programmes. Bernstein (2008) in a chapter devoted to IL described the collaboration with a faculty librarian to integrate IL with material covered in the course. Brasley (2008) described a framework for IL collaboration with faculty which includes shared vision, learning outcomes (developed together) curriculum planning and mapping, and assessment strategies. Deitering and Jameson (2008) explored the collaboration between instructors and librarians at Oregon State to teach writing and information literacy for beginning composition classes. Aharony and Bronstein (2014) added to the existing literature that suggested there should be collaboration between librarians and instructors. According to Duncan and Varcoe (2012:9), over three-quarters of the faculty surveyed suggested that information literacy instruction should consist of collaboration between librarians and the school faculty.

In a separate research, Ranaweerag's (2010:74) study revealed that all the librarians who were interviewed were very keen and enthusiastic to commence information literacy programmes in collaboration with the teaching faculty. Bury (2011:53) found "that the large majority of faculty believed that IL education should be undertaken collaboratively by faculty and librarians". This study strongly supports the current study and the views of other authors in advocating for a sustainable collaboration process between professional librarians and the faculty.

5.7 Challenges Associated with Information Literacy Education in NOUN

Every organization has challenges that may affect its day-to-day processes. Considering some of the attempts that have been made by professional librarians for the implementation of information literacy in the University, this study sought to find out the possible challenges militating against effective information literacy education in the National Open University. The most popular responses, amongst others, was physical and financial resources. After the time of data collection, the University relocated to its permanent site in Abuja with its staff and management on the 3rd of June 2016. Before its relocation, the physical structure in the previous headquarter and other study centre was a constraint as the space allocation and limited infrastructure did not allow for proper storage and staff complained of inadequate work space.

Nigerian academic libraries derive the greater part of their funds from the government (both Federal and State). The National Open University of Nigeria is a government university and has a

clearly defined policy of funding and has budgetary controls that affect the developing process of the University. Government owned university libraries in line with Ifijeh (2011) are suffering from a low budgetary allocation for education.

Nigeria is yet to provide the desired level of electricity supply to meet the needs of libraries. The power failures affect the efficacy and effectiveness of the provision of library services. Agboola (2011) posited that the library uses electricity to do many jobs, from lighting and cooling the library, to powering computers, library automation and usage of internet facilities. According to Ighodaro (2010), electric power supply affects the efficacy and competitiveness of every critical economic and social activity which includes university library services. This was another challenge that was brought up by the respondents.

Another frequently mentioned challenge was the bureaucratic bottleneck surrounding implementation of policies in the University. Librarians lamented how long it took for policies and issues relating to the library matters to be approved or implemented by the university management. Faculty members were asked to describe barriers to the development of information literacy skills in students and the shared similar responses as the librarians.

In consonance with the present study, Lwehabura and Stilwell (2008) identified a number of factors hindering IL delivery in Tanzanian universities. They were lack of clear IL policy, inadequate time, the teaching of IL as a stand-alone course on a voluntary basis and non-involvement of teaching staff. Problems such as lack of personnel and facilities were mentioned in that study as obstacles to the integration of an IL course in the curriculum. Baro and Fyneman (2009:552), in a related study conducted in Nigeria, confirmed that problems such as electricity failure, service charges for using the internet were identified in their study.

According to Anyaoku, Ezeani and Osuigwe (2014) challenges militating against information literacy as gleaned from their study included lack of an information literacy policy in these institutions, lack of university commitment to information literacy, and lack of adequate computers and teaching aids. Researchers have identified a number of other barriers to information literacy instruction in the classroom: curriculum too full (Bury 2010), faculty's lack of awareness of information literacy concepts and instruction opportunities (Bury 2010), scarce resources (time, human resources, equipment) (Julien 2005), and negative student attitudes toward instruction in

this area (Julien 2005). Other barriers mentioned by the respondents include lack of management support, low acceptance especially of the online approach, lack of funding for publicity and absence of IL policy. These barriers are peculiar to the problems identified by scholars in other African countries (Kavulya 2003; Dennis 2004; Dadzie 2007; Lwehabura 2008). Most of all, the problem of lack of IL policy militates against successful IL programmes in Africa.

5.8 Strategies to be adopted for the Implementation of Information Literacy and Lifelong Learning

Results in section 4.3.1.9 showed that staff training was the major suggestion given by most of the respondents for the implementation of effective information literacy and lifelong learning. There is need for greater emphasis in the training on communication and interpersonal skills for librarians and attention to social dynamics of the user community to increase understanding as well as reduce librarian versus user frustration (Hussain & Abalkhail 2013).

The librarians were also concerned about creating more awareness for the available information literacy programmes, educating students and making physically available the orientation programme and documents for students' use. As Hunt and Birks (2004) stressed, constant advocacy to ensure widespread support on campus is essential to the success of information literacy.

Other suggestions that did not have prominence among the librarians were having more human resources to support the library officers, easier access to library resources and involving librarians in developing GST courses.

5.9. Summary

In summary, this chapter discussed and interpreted the findings of the study presented in chapter four. The respondents were assessed on five major areas:

- Types and forms of information literacy programmes (library instruction) being offered at the National Open University of Nigeria.
- Use of resources and facilities of the university library in relation to information literacy skills development.
- The level of awareness of the students of the NOUN on the information literacy programmes in the University.
- The competency level of information literacy among the students of the National Open University of Nigeria
- The level of information literacy development in the schools and amongst the library professionals in the University.

The discussion on the various findings of the study was carried out in this chapter in relation to the literature. The results of the study stated that the information literacy library facilities available at NOUN were course materials and university websites. Course materials are the most popular resources in the university that are customised to fit the needs of the National Open University students. On the university's website, updates and news regarding the University for the students are uploaded, thereby making these resources the most adequately provided and most frequently used resources. To make for an accurate information literacy development, it is expedient for the students in the National Open University of Nigeria to utilize other information resources provided for them.

The chapter considered the information literacy materials of which the students were mostly aware. These consisted of the Use of Library Guide that is embedded in their general studies course, the basic use of computers, and the orientation programme conducted by the University for freshmen who just joined the University. The plagiarism software and the availability of a citation guide were information literacy materials that the students weren't aware of in the University.

The study confirmed the general observation that the majority of the students who were enrolled in the National Open University of Nigeria were not computer literate and needed support with computer services. This study showed that the provision of assistance on basic use of computers for information searches was a major factor in facilitating information literacy at the university

library, it is also evident that these services aren't adequate to improve the IL skills of the students for lifelong learning.

The study confirmed that there were no facilities in relation to information literacy development in all the schools and there was no form of information literacy integration curriculum in the University. The study established that there were no information literacy programmes put in place to support, promote and create awareness of information literacy for lifelong learning and no methods were put in place to assess or measure the information literacy competency level of the students in the National Open University of Nigeria. The study revealed that the collaboration link between the academics in the school and the professional librarians was weak and not coordinated. The documents analysed also provided insights on information literacy development in the University.

The next chapter will present the summary, conclusions and recommendations of the study which will be discussed based on the objectives of the study.

CHAPTER SIX

SUMMARY, CONCLUSIONS AND RECOMMENDATIONS

6.0 Introduction

In the previous chapter, the data collected and analysed was discussed and interpreted. Chapter six presents the summary of the research findings. It also provides conclusions derived from the findings of the study and finally gives recommendations for the study and suggestions for further research. It is generally agreed that the conclusion of a matter is the last word on the issue and also a very important issue. Kalusopa (2011:263) reported that the purpose of a conclusion is to re-state the findings of the study and to draw the implications of the findings for the research questions at hand.

The aim of the study was to investigate information literacy skills among the students in the National Open University of Nigeria. The summary and conclusions on this study are presented and discussed according to the following objectives:

- To identify the types and forms of information literacy programmes (library instruction) being offered at the National Open University of Nigeria.
- To examine the resources and facilities of the university library in relation to information literacy skills development.
- To assess the level of awareness of the students of the NOUN on the information literacy programmes in the University.
- To determine the competency level of information literacy among the students of the National Open University of Nigeria.
- To determine the level of information literacy development in the schools and amongst the library professionals in the University.
- To proffer strategies that should be adopted for the implementation of information literacy and lifelong learning.

6.1 Summary of Findings

This section presents a summary of findings in consonance with objectives meant to be achieved by the study. The study investigated the available information literacy materials in the University, the most frequently used resources and the purpose for their use. It also considered the level of information literacy development factors in the University, the level of collaboration between the academic staff and librarians towards information literacy integration and, most importantly, the information literacy competency level of the students in the University. The summary of the findings which guided this study are the possible answers to the study. The summary of the results of questionnaire survey is presented in this section.

6.1.1 To Identify the Types and Forms of Information Literacy Programmes being offered at the National Open University of Nigeria

The results revealed that amongst the widely mentioned programmes by all the respondents, the most available information literacy materials were course materials and this was followed in descending order of prominence by the university library website, online library catalogue, reference materials (print), E-books (online) and online reference materials. The library resources with the least prominence in terms of availability were journal articles (print), government gazettes/other documents), databases and PowerPoint presentations.

6.1.2 To Examine the Resources and Facilities of the University Library in Relation to Information Literacy Skills Development.

The mostly used IL resources were course materials and this was followed by university library websites. Reference materials (online), E-books, reference materials (online) and book chapters (print) were also indicated as the most used resources available in the library. The IL materials that were not relatively used as others were journal articles (print), databases, government gazette/other documents and departmental power point presentations.

The results in this study disclosed that the mostly used library materials by users in the library were course materials, university library websites, book chapters (print), reference materials (print) and journal articles (print). The library resources that are frequently not used as others are government gazettes/other documents, online indexes, handouts on how to get books from other

libraries and departmental PowerPoint presentations. The course materials and university websites were the most heavily used library resources in the University.

6.1.3. To Examine the Resources and Facilities of the University Library in Relation to Information Literacy Skills Development.

Amongst the resources provided in the NOUN library, the government gazette/other documents were the mostly adequate resources; this was followed by journal articles (online), journal articles (print), E-books (online) and scholarly web pages. The library resources and facilities that were assessed as relatively least adequate provided were reference materials, handouts explaining how to access resources from other libraries and manual describing the proper format for a research paper.

From the Librarians' assessment, the outcome of the results revealed that journal articles (online) and databases were the mostly adequately provided resource at the University library; these were followed in descending order by periodicals (online) and course materials as well as reference materials (online) and University library websites. The lowest responses for the library resources and facilities that were assessed as relatively least adequate were professional web pages, government gazette/other documents, handouts on how to get books from other libraries and PowerPoint presentations.

6.1.4 Level of Awareness of Information Literacy Programmes in the University

It was evident that the students in the University were mostly aware of the GST (General Studies on Use of Library) and the library orientation programme in the University but others were unaware of these programmes. Some indicated that there were tutorials on how to use search tools to find possible sources and user education on the use of the library. The information literacy programmes on which more of the respondents were unaware were the availability of plagiarism software and the availability of a citation guide.

From the results in the study, librarians also agreed with the findings that students were more aware of the library orientation programme, the user education on library use and assistance on the use of computers for information searches. The information literacy programmes on which more of the librarians confirmed that students were unaware of were: tutorials on use of search tools, the

GST course on the use of the library, availability of a citation guide, using the library catalogue (online), and plagiarism software.

6.1.5 To Determine the Level of Information Literacy Development in the Schools and amongst the Library Professionals in the University

The findings indicated that the provision of the assistance on the basic use of computers for information searches was a major factor in facilitating information literacy at the university library and the services were getting better. This was followed in descending order by use of the library catalogue (online), availability of the NOUN orientation document, General Studies (GST) course on the use of the library, and availability of the NOUN copyright policy. For factors such as the availability of a citation guide, professional and friendly interaction of library staff members with library users and tutorials on using search tools to find possible sources, the respondents felt there wasn't so much improvement in the level of development. As such, they had no expectations for the information literacy programme.

The librarians confirmed that the provision of professional services and friendly interaction of library staff members with library users were amongst the highly selected items that helped in facilitating the information literacy programme of NOUN. This was followed in descending order by competence of library staff, tutorials on search tools to find other sources, education on the use of the library and assistance on basic use of computers for information searches. The other items that were assessed and considered as not very developed were the GST course on the use of the library, availability of citation guide, appropriate number of library staff and availability of NOUN plagiarism software.

6.1.6 To Determine Competency Level of Information Literacy among the Students of the National Open University of Nigeria

The students were asked to indicate their competence level in the search for information, use of information sources, organisation, evaluation and research. The results showed that 191 (3.4%) of the respondents had a high level of competence of information literacy while 167 (46.6%) had a low competency level.

6.1.7 To Proffer Strategies that could be adopted for the Implementation of Information Literacy and Lifelong Learning

Librarians were requested to make suggestions on possible strategies that could be adopted for the implementation of information literacy and lifelong learning. Their responses indicated that staff training was the major suggestion given by most of the respondents towards the implementation of effective information literacy and lifelong learning. The majority of librarians in the university library were obviously new in the profession and are not exposed to the practical ways of providing library services and therefore needed training to be kept abreast with the information literacy delivery techniques.

This was followed by creating awareness of information literacy sources, educating students on use of library materials, producing a hard copy of orientation documents and having internet connection always. The librarians were also concerned about creating more awareness for the available information literacy programmes, educating students and making physically available the orientation documents for students' use. Other suggestions that were not very prominent among the librarians' responses were issues like having more human resources in terms of recruiting more library officers, easier access to library resources and involving librarians in developing a GST course.

6.2 Conclusions

Based on the research findings and discussions provided in chapters four and five, the study made the following conclusions according to the objectives of the study. In drawing conclusions, only the major findings that directly addressed the research questions are discussed.

6.2.1 Conclusion on Types and Forms of Information Literacy Instruction Available in NOUN

From the questions in the instruments, the objectives were considered from the perspective of information sources available for information literacy. The conclusion from the study was that the information literacy library facilities available at NOUN were course materials and information from the university website.

The respondents in the qualitative segment observed that there was no information literacy instruction available in their schools that they were aware of. Also from the study, the conclusion was that there were no facilities available for students' use in relation to information literacy in all the schools.

6.2.2 Conclusion on the Resources and Facilities of the University Library in relation to Information Literacy Skills Development

The result from this study gave the conclusion that the most frequently used information literacy resource in the university library was the course material, and the university library website was the next available library resource. Course materials were customised reading materials in the University and, with NOUN being an online institution, the website was the most accessible means of instruction for students.

Also in terms of purpose of use, the conclusion was that majority of the students use the library for academic work other than research and a smaller percentage use it for conducting research while only 10.9% of them use it for recreation and non-academic purposes.

6.2.3 Conclusion on the Level of Awareness of Information Literacy Programmes in the University

The conclusion arising from the assessment of students' level of awareness for information literacy programmes in the University was derived from the orientation programmes, user education on library use and assistance on the use of the computer for information searches. From the responses received from the deans of the schools interviewed in this study, there were no information literacy programmes that were put in place to support, promote and create awareness of information literacy for lifelong learning and no methods that were put in place to assess or measure the information literacy competency level of the students in the National Open University of Nigeria.

6.2.4 Conclusion on the IL Competency Level among National Open University Students

From the data generated and the information from the students, the study concluded that the majority of the respondents felt that they had a high level of competence in information literacy while only a few had a low competency level.

6.2.5 Conclusion on the Level of Information Literacy Development in the University

This study concluded that there were no information literacy programmes in place to support, promote and create awareness of information literacy for lifelong learning and no assessment methods in place to assess or measure the information literacy competency level of the students in the National Open University of Nigeria.

While assessing the factors facilitating information literacy development, the results of the study clearly showed that the provision of the assistance on basic use of computers for information searches by librarians was a major factor used in facilitating information literacy development at the university library.

6.2.6 Conclusion on the Integration of Information Literacy

In response to the question, four respondents interviewed reported that some courses in the school curriculum had elements of information study and management of information but they were not formal or officially pronounced. On the contrary, from the documents analysed, it was highlighted that within the Good Study Guide course is a section that describes the process of the use of the library and this was considered to be a form of IL integration in the curriculum. The conclusion is that the Good Study Guide is the only form of information literacy instruction integrated into the students' programme.

This study concluded that there was no coordinated and unified method of collaboration between the academics and the librarians on their medium of collaboration.

6.2.7 Conclusion on the Challenges Associated with Information Literacy Education in NOUN

The study affirmed that the most frequently mentioned challenges were lack of physical and financial resources, constraints regarding space allocation and limited infrastructure which did not allow for proper storage, and inadequate work space. Another challenge was the bureaucratic

bottleneck surrounding implementation of policies in the University and issues surrounding decision taking in the University.

6.2.8 Conclusion on Strategies to be adopted for the Implementation of Information Literacy and Lifelong Learning

From data gained from the study, the conclusion derived was that staff training was the major suggestion given for the implementation of effective information literacy and lifelong learning. The librarians were also concerned about creating more awareness of the available information literacy programmes, educating students and making physically available the orientation programme and documents for students' use.

Amongst the respondents, the most repeated recommendation for best practices for developing information literacy to facilitate lifelong learning was an improved means of interaction between the library and its users.

6.3 Recommendations

In view of the findings based on the data derived from the questionnaires, the interviews and the documents analysed during the study, the following recommendations are made:

- The findings of the study revealed that there was no consolidated form of IL integration in the University. In some institutions information literacy courses are either embedded into academic curricula as separate compulsory or elective courses. It is strongly recommended that measures be put in place for proper IL integration in the University. Information literacy instruction may be provided in a web-based environment as a stand-alone, web tutorial, a web-based, for-credit information literacy course, or information literacy instruction that is integrated into the course content of an online academic course.
- For effective IL implementation in a distance learning environment, the University should work towards developing an information literacy course that is designed for asynchronous online delivery.
- Considering the peculiarity of the adult students, the IL course pattern should be largely self-directed, online tutorial be made available on the library website allowing students the choice to take the course as it fits them. They can be assessed and evaluated as part of students' tutored marked assignments but should be made practical and participatory.

Students can access this set of tutorials at their discretion through the university's courseware.

- One of the ways of making information literacy materials available on the web is to use the virtual learning environment software. Course content for information literacy can be embedded into existing subject-based courses or a separate information literacy module through the virtual learning environment. The virtual learning environment includes online assessment tools, communication tools such as bulletin boards or online chat rooms and a number of inherent tools that can be utilised to make the course interactive. Using available resources, the university management should key into using the available resources to develop an information literacy virtual learning environment.
- It is very necessary to include information literacy as one element of an online self-test developed by the university library to inform and acquaint potential online learners of essential skills and personal qualities needed for success in an online learning programme.
- To a large extent all online learners should be made to demonstrate information literacy and technology fluency in using the university's tools. First-time online learners may be made to take a pre-test designed to assess their information literacy skills prior to their enrolment.
- The development and facilitation of modern e-courses and more advanced information literacy courses by academics with the collaboration of professional librarians is an essential project that should be embarked upon to enhance the process of information literacy development. One of the ways this can be accomplished is through the development of training introductory course materials based on the factors affecting students' IL skills. During this study, the researcher in collaboration with the Open Education Resources Unit of the University developed a MOOC kit (Massive Open Online Course Kit) on information literacy skills and search skills. This course was a five weeks' programme and was a part of the open education concept of the UNESCO project. A more detailed programme needs to be developed to replace this project.
- The ACRL standard on distance education observed that distance learners are those learners who are truly geographically isolated from the originating institution. Such individuals typically have special needs for the services and resources. To make for an effective information literacy programme in the National Open University, there is need to

also advocate for the university's support for the development of IL distance learning projects like short videos and online tutorials that could be made available through the university's library webpage and subject guides.

- Librarians and academics should be involved in more research towards developing online content that will fit the needs of the students with the available infrastructure in the university and in the country.
- The GST (Use of Library) form of information literacy integration that is currently being used in the National Open University should be reviewed and an in-depth integration be implemented.
- Furthermore, the library orientation programme which currently runs in the University is a 30 minutes to one-hour welcome session and it is not adequate to impart the relevant information literacy skills to the new students. The university library and the professionals should structure an information literacy lecture that will be a formal library orientation document and used generally in all study centres.
- From the analysis from the documents reviewed it was discovered that the University had a plagiarism software and a citation policy. Contrary to the information from the data analysis in the questionnaire, the students indicated that they were not aware of the availability of the plagiarism software and the citation policy. It is obvious that there is a need for the plagiarism and citation software tutorials to enhance the students' understanding of these issues but, at the same time, the students must be made aware of the existence of these policies.
- The findings of the study point mainly to the fact that university students do not possess the requisite skills in information literacy. This calls for great measures to be instituted by the University in relation to the development of information literacy skills.
- The university management needs to examine the best information literacy practices that will encourage students to engage with the information environment, thereby improving their information literacy skills.
- More investigations should be made to find out the barriers that prevent the development and deployment of IL in the University, and feasibility studies should be conducted and possible solutions implemented.

- Information literacy policies should be formulated and channelled to support IL education in the University so that students will attain the necessary competencies and skills needed to access, process and assess information.
- According to Hoffman (2011), embedded librarianship is part of an overall strategy to provide “equivalent” library access, resources and services for distance students. The embedded online librarian is a librarian that participates in a particular online course by logging into the course management system. It is a collaborative effort between academics and the librarians.
- Librarians are obligated to work closely with the academic staff in the schools to add library research guides, customise library content to course pages such as course research guides and tutorials.
- The ICT department in collaboration with professional librarians should develop web-based instructions for finding library materials, how to search NOUN electronic databases and on-line journals, and instruction in the use of the internet. This could be in the form of using the Web-based Research Tutorial.
- The University should increase budget allocation towards the provision of library materials for the development of information literacy materials and development of information literacy programmes.
- The recommendation is to integrate information literacy to become part of the university curriculum for all students and be part of the core and common course among students. This will ensure that information literacy classes are mandatory.
- The university library should carry out a needs assessment for information literacy training. This will help determine the gaps existing in the current programme. It will unveil to the university management the possible steps and feedback towards the development of information literacy in the University.
- Through the results from this study, it was recommended that information literacy educators should be trained in the area of information resources and ICT in order to enhance job performance. There is a serious need for the University to engage the librarians through regular training and re-training through professional development workshops.
- The library staff in conjunction with the ICT unit of the University should create seminars and workshops for students and staff towards the improvement of information literacy

instruction. Effective IL training programmes in an ODL environment require constant research.

- Librarians should be involved in constant research processes to be kept abreast with current trends in information literacy.
- Professional collaboration should be encouraged between librarians and academic staff through collaborative research and joint seminars or conference presentations.
- The results of the study revealed there was still so much work to be done with regards to the implementation of policies by the university management and staff of the University. To avoid duplicating information literacy practices, policies need to be established and instituted. The university management needs to work with developed guidelines towards instituting a proper framework for developing the IL competencies of students. There is a need to set a clear IL policy that will guide IL practices at the institution.

From the result of the analysis, students also have a role to play in developing their information literacy skills for lifelong learning. They should be encouraged to take responsibility for their learning process.

6.4 Suggestions for Further Research

The study was limited to five study centres out of the seventy study centres in the National Open University of Nigeria. The five centres were chosen based on the population of the students and these centres were amongst the most developed centres. There are a variety of themes that emanated from the study which may require further attention in the field of information literacy, lifelong learning, distance education and higher education institutions. Due to time limitations and other constraints, these themes could not be covered in this study. The themes that could be considered as topics for future research are mentioned below:

- It is suggested that there should be a comparative study between conventional universities and distance learning institutions regarding information literacy and lifelong learning. It is necessary for this study to be extended to other universities in Nigeria and Africa.
- A study on academics' perceptions of information literacy should be embarked upon to identify common problems associated with lack of collaboration between academics and librarians.

- One area of IL that needs further development is information literacy and curriculum design.
- Current research into curricular-integrated IL approaches through cognitive and critical thinking skills should be highly encouraged by the research unit of the University.
- Contemporary research that focuses on digital literacy and its relationship to information literacy should be encouraged by the research unit of the University.
- Importantly, there is need to conduct the study using other research methods such as the mixed methods research and the phenomenological method of research in order to give more insights on issues of information literacy and lifelong learning amongst undergraduate students or graduate students in higher education institutions. The phenomenological method of research is particularly effective at bringing to the fore the experiences and perceptions of individuals from their own perspectives.
- It is necessary to further examine why university students still do not have the required IL and competency skills.
- Further research studies should be carried out with other students in different categories in order to better understand the nature of IL instruction on other educational levels.
- It is necessary for a further research to be conducted to find out the information seeking behaviour of the students concurrently with the information literacy skills of the students.
- Several theories of learning have been identified with the adult learning process; it is necessary for a research to be embarked upon to determine the most appropriate theory of learning for information literacy skills development.
- There is therefore a dire need for further research on the acquisition of specific IL knowledge and skills by distance learning students.
- This study embarked on finding out about the information literacy and lifelong learning skills of the National Open University Students; however, more studies need to be carried out to assess the effect of the distance learning education on the development of information literacy skills of the students.
- There is need for more studies to be conducted in investigating the role of librarians and academics towards a collaborative effort in integrating information literacy in the curriculum in higher education.

- A detailed research on the processes of developing IL policy guidelines and strategic plans in relation to distance learning policies is very necessary.
- There is need for further research to assess the implementation of information literacy programmes and the impact of information literacy integration on distance learning students.
- Owing to the fact that the National Open University was established for adult learners who are occupied in their work places, it may be necessary to conduct a comparative study with information literacy at the work place and in the higher education institutions.

6.5 Final Conclusion

Distance education librarians have much more critical roles to play in supporting the distance education system in the new learning environment, especially in terms of information literacy skills development. Librarians must work closely with academic staff to provide support for networked learning approaches and for developing information literate students. According to Leedy and Ormrod (2010:296), “conclusions should be entirely supported by the data presented”. Only the conclusions from the major findings that directly addressed the research questions are discussed.

The study investigated information literacy and lifelong learning in the National Open University of Nigeria. This study was organised into five chapters. Chapter one of this study is considered the foundation of the study. Chapter two reviewed literature regarding information literacy and lifelong learning in a distance institution. It reviewed the concept of information literacy integration with the constructivist blend of learning theory. This review was done based on the six study objectives which are outlined in the appendix below. Chapter three presented the research methodology. It described in detail the research methods and designs that were used and this gives the reader the understanding of what data was collected, how and where the data was collected. Chapter four presented an analysis and description of the results attained from the questionnaires from students and librarians as well as the results from interviews and document analysis. Chapter five provided a discussion of the findings which offered a broad interpretation of the results of the data collected, which was done through the use of questionnaires, interviews and document analysis. Chapter six served as a summary of each chapter, including a summary of the results and

recommendations, as well as a conclusion to the problem statement and the objectives of the study to make sure that they have been responded to fully. Finally, the areas for further research were identified based on the findings.

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APPENDIX A

STUDENTS' QUESTIONNAIRE ON INFORMATION LITERACY SKILLS AMONG STUDENTS IN THE NATIONAL OPEN UNIVERSITY, NIGERIA

Dear respondent,

I am a PhD student in the Department of Information Science, University of South Africa (UNISA), South Africa. I am undertaking a doctoral research on information literacy and lifelong learning at the National Open University of Nigeria. The purpose of the study was to investigate information literacy skills amongst students at the National Open University.

As a registered student of the National Open University in your study centre, you have been selected to (voluntarily) participate in the study. Hence, I hereby request that you complete this questionnaire as appropriate. I wish to assure you that all responses will be treated in utmost confidence and used only for the purpose of the research.

Thanking you for your cooperation.

Mrs. Edeama Onwuchekwa (eonwuchekwa@noun.edu.ng)

Instructions: Kindly indicate the option(s) that best represent your response.

Name of institution:

Section A: Socio demographic Information

1. Gender: Male [], Female []
2. Age in years: years
3. Year of admission:
4. Level of study: 100 [], 200 [], 300 [], 400 [], 500 []
5. Course of study:
6. Department of study:
7. School of study: School of Agriculture [], School of Arts and Social Sciences [], School of Education [], School of Health Sciences [], School of Law [], School of Science and Tech [], School of Mgt. Science [], School of Agric []

Instruction: Please read this before you answer the questions.

Information literacy is defined as knowing when and why you need information, where to find it, and how to evaluate, use and communicate it in an ethical manner.

Information literacy is also considered as a basic existence skill, which forms the basis of lifelong learning and the key for students to become independent lifelong learners in the information society.

Section B: Types and Forms of Library Instruction in the National Open University of Nigeria

8. Please indicate the **Types and Forms** of instructional materials in your institution

Library instructional materials	Always available	Rarely available	Never available
Library catalogue (online)			
Reference Materials (print)			
Reference Materials (online)			
Periodicals (print)			
Periodicals (online)			
Journal articles (print)			
Journal articles (online)			
Government gazette/other documents			
Departmental PowerPoint presentations			
A manual describing the proper format for a research paper			
A handout explaining how to get books from other libraries			
Online indexes			
Databases (e.g. JSTOR, Questia, Ebscohost,)			
Book chapters (print)			
Book chapters (online)			
University library websites			

Library instructional materials	Always available	Rarely available	Never available
Professional web pages			
Course materials			
Others			

9. Please indicate the extent to which you use these **Types and Forms** of instructional materials in your institution

Library instructional materials	Once a week	Twice a month	More than 10 times a year	Never
Library catalogue (online)				
Reference Materials (print)				
Reference Materials (online)				
Periodicals (print)				
Periodicals (online)				
Journal articles (print)				
Journal articles (online)				
Government gazette/other documents				
Departmental PowerPoint presentations				
A manual describing the proper format for a research paper				
A handout explaining how to get books from other libraries				
Online indexes				
Databases (e.g. JSTOR, Questia, Ebscohost,)				
Book chapters (print)				

Library instructional materials	Once a week	Twice a month	More than 10 times a year	Never
Book chapters (online)				
University library websites				
Professional web pages				
Course materials				
Others				

Section D: Resources and Facilities in Relation to Information Literacy Skills Development

10. What has been your *most frequent* reason for using the library? Recreation or other non-academic purposes [], Conducting research [], Doing other academic work such as studying [], Not at all []

11. Please indicate the adequacy of information resources and facilities at the University Library in relation to information literacy skills development

Library instructional materials	Very adequate	Adequate	Not sure	Inadequate	Grossly inadequate
Library catalogue (online)					
Reference Materials (print)					
Reference Materials (online)					
Periodicals (print)					
Periodicals (online)					
Journal articles (print)					
Journal articles (online)					
Government gazette/other documents					
Departmental PowerPoint presentations					

Library instructional materials	Very adequate	Adequate	Not sure	Inadequate	Grossly inadequate
A manual describing the proper format for a research paper					
A handout explaining how to get books from other libraries					
Online indexes					
Databases (e.g. JSTOR, Questia, Ebscohost,)					
Book chapters (print)					
Book chapters (online)					
University library websites					
Professional web pages					
Course materials					
Others					

Section E: Level of Awareness of Information Literacy Programmes in the University

12. Please indicate your awareness of the following information resources and facilities at the University Library in relation to information literacy skills development

Information Technology Awareness Items	Aware	Not aware
Library Orientation Programme		
Tutorial on using search tools to find possible sources		
GST course on Use of Library		
User Education on the use of the library		
Availability of Citation Guide		
Using a library catalogue (online)		
Availability of NOUN Plagiarism software		
Assistance on basis use of computer for information search		
Availability of NOUN copyright policy		

Information Technology Awareness Items	Aware	Not aware
Availability of NOUN Orientation Document		
Others		

Section F: Competency level of information literacy among the students of the National Open University of Nigeria

13. Kindly respond to the following statements as regards the need to search for information sources in the Library/ database.

Competency statements	Mostly like me	Like me	Unsure	Unlike me	Most unlike me
Whenever I have an assignment for research or speech, I feel confident of what item(s) I need to search.					
Sometimes I feel lost because some information items about an issue look confusing.					
No issue can be too complex for me to understand.					
Information items are so valuable that I can incur whatever reasonable cost to acquire them					
I can sort and break any issue down to its understandable components to prevent information overload during search.					
I know the appropriate query terms to use when initiating information retrieval.					
I do not distinguish between types of information retrieval when searching for information.					

Competency statements	Mostly like me	Like me	Unsure	Unlike me	Most unlike me
I get confused because of the many different formats (print, electronic, etc.) when searching for information.					
I am certain that I can use whatever information I find.					
I know how to broaden or narrow a search using Boolean operators (AND, NOT and OR) and truncations.					
It find it easy to interpret the results of a search.					
I can easily handle the use of an index (e.g. catalogue, database, etc.).					
I do not usually organise information materials in libraries.					
I do not usually opt for the use of different media types (print, video, photography, etc.) because I fear the information might not be well presented.					
I usually find some information items so confusing that I do not know if I can use them.					
I am always sure that the information items I get in a search have answers to my questions.					
I usually realise that a lot of the information items I find are irrelevant and unnecessary.					
I am usually at a loss as to how to record or cite all my sources.					
I do understand the ethical issues about the use of information.					

Competency statements	Mostly like me	Like me	Unsure	Unlike me	Most unlike me
I understand the fact that information items are useful beyond the current efforts and as such have to be kept for future use.					

Section G: Level of information literacy development

14. Please respond to the following as regards how the factors are facilitating information literacy development at the University Library

Information literacy facilitation factors	Getting better	Remain unchanged	Getting worse
Library Orientation Programme			
Tutorial on using search tools to find possible sources			
GST course on Use of Library			
User Education on the use of the library			
Availability of Citation Guide			
Using a library catalogue (online)			
Availability of NOUN Plagiarism software			
Assistance on basis use of computer for information search			
Availability of NOUN copyright policy			
Availability of NOUN Orientation Document			
Appropriate number of library staff			
Competence of library staff			
Professional and friendly interaction of library staff members with the users of library facilities			
Others			

Thank you very much.

APPENDIX B

**LIBRARIANS QUESTIONNAIRE ON
INFORMATION LITERACY SKILLS AMONG STUDENTS IN THE NATIONAL OPEN
UNIVERSITY, NIGERIA**

Dear respondent,

I am a PhD student in the Department of Information Science, University of South Africa (UNISA), South Africa. I am undertaking a doctoral research on information literacy and lifelong learning at the National Open University of Nigeria. The purpose of the study is to investigate information literacy skills amongst students in the National Open University.

As a professional librarian in a study centre in the National Open University, you have been selected to (voluntarily) participate in the study. Hence, I hereby request that you complete this questionnaire as appropriate. I wish to assure you that all responses would be treated in utmost confidence and used only for the purpose of the research.

Thanking you for your cooperation.

Mrs. Edeama Onwuchekwa (eonwuchekwa@noun.edu.ng)

Instructions: Kindly indicate the correct option(s) that best represent your response.

Name of institution:

Section A: Socio demographic Information

15. Gender: Male [], Female []

16. Age in years: years

17. Year of engagement in current institution:

18. Years of experience as a librarian: years

19. Degree obtained:

20. Academic institution attended:

21. Current cadre: University Librarian [], Deputy Librarian [], Principal Librarian [], Senior Librarian [], Librarian I [], Librarian II [], Assistant Librarian []

22. Duty section in the library:

Instruction: Please read this before you answer the questions.

Information literacy is defined as knowing when and why you need information, where to find it, and how to evaluate, use and communicate it in an ethical manner.

Information literacy is also considered as a basic existence skill, which forms the basis of lifelong learning and the key for students to become independent lifelong learner in information society.

Section B: Types and Forms of Library Instruction in the National Open University of Nigeria

23. Please indicate the **Types and Forms** of instructional materials in your library

Library instructional materials	Always available	Rarely available	Never available
Library catalogue (online)			
Reference Materials (print)			
Reference Materials (online)			
Periodicals (print)			
Periodicals (online)			
Journal articles (print)			
Journal articles (online)			
Government gazette/other documents			
Departmental PowerPoint presentations			
A manual describing the proper format for a research paper			
A handout explaining how to get books from other libraries			
Online indexes			
Databases (e.g. JSTOR, Questia, Ebscohost,)			
Book chapters (print)			

Library instructional materials	Always available	Rarely available	Never available
Book chapters (online)			
University library websites			
Professional web pages			
Course materials			
Others			

24. Please indicate the extent to which these **Types and Forms** of instructional materials are used in your library

Library instructional materials	Once a week or more	Once or twice a month	A few times a year	Never
Library catalogue (online)				
Reference Materials (print)				
Reference Materials (online)				
Periodicals (print)				
Periodicals (online)				
Journal articles (print)				
Journal articles (online)				
Government gazette/other documents				
Departmental PowerPoint presentations				
A manual describing the proper format for a research paper				
A handout explaining how to get books from other libraries				
Online indexes				
Databases (e.g. JSTOR, Questia, Ebscohost,)				
Book chapters (print)				

Library instructional materials	Once a week or more	Once or twice a month	A few times a year	Never
Book chapters (online)				
University library websites				
Professional web pages				
Course materials				
Others, please specify				

Section D: Resources and Facilities in Relation to Information Literacy Skills Development

25. What has been the *most frequent* reason why readers use the library? Recreation or other non-academic purposes [], Conducting research [], Doing other academic work such as studying [], Not at all []

26. Please indicate the extent to which the following information resources and facilities at the University Library are adequate for their information literacy skills development

Library instructional materials	Very adequate	Adequate	Not sure	Inadequate	Grossly inadequate
Library catalogue (online)					
Reference Materials (print)					
Reference Materials (online)					
Periodicals (print)					
Periodicals (online)					
Journal articles (print)					
Journal articles (online)					
Government gazette/other documents					
Departmental PowerPoint presentations					
A manual describing the proper format for a research paper					

Library instructional materials	Very adequate	Adequate	Not sure	Inadequate	Grossly inadequate
A handout explaining how to get books from other libraries					
Online indexes					
Databases (e.g. JSTOR, Questia, Ebscohost,)					
Book chapters (print)					
Book chapters (online)					
University library websites					
Professional web pages					
Course materials					
Others					

Section E: Level of Awareness of Information Literacy Programmes in the University

27. Please indicate the awareness of the Library users of the following information resources and facilities at the University Library

Information Technology Awareness Items	Aware	Not aware
Library Orientation Programme		
Tutorial on using search tools to find possible sources		
GST course on Use of Library		
User Education on the use of the library		
Availability of Citation Guide		
Using a library catalogue (online)		
Availability of NOUN Plagiarism software		
Assistance on basis use of computer for information search		
Availability of NOUN copyright policy		
Availability of NOUN Orientation Document		
Others		

Section F: Level of information literacy development

28. Kindly respond to the following as regards how they are facilitating information literacy development at the University Library

Information literacy facilitation factors	Getting better	Remain unchanged	Getting worse
Library Orientation Programme			
Tutorial on using search tools to find possible sources			
GST course on Use of Library			
User Education on the use of the library			
Availability of Citation Guide			
Using a library catalogue (online)			
Availability of NOUN Plagiarism software			
Assistance on basis use of computer for information search			
Availability of NOUN copyright policy			
Availability of NOUN Orientation Document			
Appropriate number of library staff			
Competence of library staff			
Professional and friendly interaction of library staff members with the users of library facilities			
Others			

Section H: Strategies to be adopted for the implementation of information literacy and lifelong learning

29. Kindly suggest in the spaces provided below what you think should be done as far as the implementation of library instruction (information literacy) is concerned.

1. _____
2. _____
3. _____
4. _____
5. _____

6. _____

Thank you very much for your time.

APPENDIX C

LETTER OF REQUEST TO CONDUCT RESEARCH

CENTRE DIRECTORS IN THE NATIONAL OPEN UNIVERSITY OF NIGERIA

The Study Centre Director.....
.....Centre

Dear Sir/Madam,

RESEARCH PERMISSION

I am a Doctoral Student in the department of Information Studies with the University of South, UNISA.

I am writing to ask for permission to collect research data by questionnaire at your Study Centre. The title of the thesis is “Information literacy and lifelong learning in the National Open University of Nigeria.”. The purpose of the study is to investigate the information literacy skills amongst students and to ascertain the level of IL development in the University.

I wish to administer the questionnaire to the students in your study centre as part of the research procedures to develop my thesis. The data collected will be analysed and the findings reported in Chapter 5 of the thesis.

The questionnaire takes not more than 30 minutes to complete and will not in any way disrupt the academic activities of the student.

I am committed to respecting and protecting the privacy of data gathered and to the ethical use of information. The data gathered will be treated with the highest level of confidentiality. Participation in the study is voluntary and participants can disengage from the research at any time if they feel uncomfortable.

Should you have any concern and questions about the study you may use the following details:

Mrs Edeama Onwuchekwa
eonwuchewa@noun.edu.ng
+2348033765845

Please kindly sign below:

I have read about the above study and hereby grant permission for the study to be carried out in my study centre.

.....

APPENDIX D

Dear University Librarian,
National Open University of Nigeria.

Sir,

PERMISSION TO CONDUCT PhD RESEARCH WORK AT YOUR LIBRARY

I am a Doctoral Student in the department of Information Studies with the University of South, UNISA.

I am writing to ask for permission to collect research data by questionnaire in your Library. The title of the thesis is “Information literacy and lifelong learning in the National Open University of Nigeria.”. The purpose of the study is to investigate the information literacy skills amongst students and to ascertain the level of IL development in the University.

I wish to administer the questionnaire to the librarians in the University library as part of the research procedures to develop my thesis. The data collected will be analysed and the findings reported in Chapter 5 of the thesis. The questionnaire takes not more than 30 minutes to complete and will not in any way disrupt the activities for their official hours.

I am committed to respecting and protecting the privacy of data gathered and to the ethical use of information. The data gathered will be treated with the highest level of confidentiality. Participation in the study is voluntary and participants can disengage from the research at any time if they feel uncomfortable.

Should you have any concern and questions about the study you may use the following details:

Mrs Edeama Onwuchekwa

conwuchewa@noun.edu.ng

+2348033765845

Please kindly sign below:

I have read about the above study and hereby grant permission for the study to be carried out in my study centre.

.....

APPENDIX E

LETTER OF REQUEST TO CONDUCT RESEARCH

**FOR HEADS OF SCHOOLS/ FACULTIES IN THE NATIONAL OPEN UNIVERSITY
OF NIGERIA**

The Dean.....

Address.....

Dear Sir/Madam,

RESEARCH PERMISSION

I, Onwuchekwa, Edeama, am a registered student with University of South Africa (UNISA) in Department of Information Studies. I am currently in the process of completing my dissertation entitled: *Information literacy and Lifelong learning in the National Open University of Nigeria*. Your School/Faculty is one of those selected purposively to take part in this study. I do hereby seek your request for permission to undertake this exercise in your school. I am writing to request for a brief interview session with you in relation to this study. The focus of the study will be based on the level of development of information literacy in your school. Data collected will be treated with all confidentiality protocols for academic purpose of this study only.

Thanking you in advance for your support,

Best Regards,

Onwuchekwa, Edeama O.

Student number: 51387565

Telephone No: +234803376845

E-mail. eoncwuchekwa@noun.edu.ng

APPENDIX F

INTERVIEW SCHEDULE FOR DEANS OF SCHOOLS/FACULTIES INFORMATION LITERACY AND LIFE LONG LEARNING IN THE NATIONAL OPEN UNIVERSITY OF NIGERIA

Dear Sir/Madam,

My name Mrs Edeama O. Onwuchekwa and I am carrying out a study on “Information literacy and lifelong learning of students in the National Open University of Nigeria” in Information Science at the University of South Africa.

By participating in this interview you agree that the information you provide may be used for research purposes. You have been selected to participate in this interview because you are a dean and the academic coordinator of your school. You are, however, under no obligation to participate in the interview and can withdraw from the study. If you choose to participate in this interview, it will take not more than 30 minutes of your time.

I do not foresee that you will experience any negative consequences by participating in this interview. Nevertheless, the researcher undertakes to keep any individual information provided herein confidential. It is hoped that the information I gain from this interview will help me in completing my dissertation.

Should you require any further information, want feedback on the study or need to contact the researcher about any aspect of this study, feel free to do so.

Your invaluable effort in participating in the interview is greatly appreciated.

Section 1

Personal Information

1. What School do you belong to?

.....

2. What is your rank?

Professor []

Associate Professor []

Senior lecturer []

Lecturer []

Junior lecturer []

Other, specify

3) How long have you worked in the National Open University Library

1-2 years [] 3-4 years [] 5-6 years [] 7-8 years [] 9-10 years []

4) How long have you served as the Dean of your school??

1-2 years [] 3-4 years [] 5-6 years [] 7-8 years [] 9-10 years []

Section A: Information literacy instruction

Please give details of how the available information literacy instructions available in the National Open University of Nigeria

Section B: Availability of Information resources for information literacy

Please how often do you access and use electronic resources in your research?

Section C: Information literacy Programme

Please give different information literacy programs that are put in place to support and promote information literacy for lifelong learning in your university

Section D: Level of collaboration

Please give your opinion on the level of collaboration between the Deans of Schools and the Library Professionals

Section E: Challenges against Information Literacy Education

What are some of the challenges militating against effective information literacy education in the National Open University?

Section F: Recommendation and Best Practices for Information Literacy for Lifelong learning

What best practices for developing information literacy to facilitate lifelong learning would you suggest for NOUN students?

Thank you for your time

Edeama Onwuchekwa

eonwuchekwa@noun.edu.ng

APPENDIX G

DOCUMENT ANALYSIS

S/N	Evaluation Items/Documents
1	University website/Library website
2	Orientation/Training Manual
3	Annual reports
4	University Library/school library attendance register
5	Academic Brief and 2012-2017 strategic plan
6	National Open University Courseware (Good Study Guide)
7	The University's copyright act.
8	The University's blue print

APPENDIX H

RESEARCH OBJECTIVES, RESEARCH QUESTIONS AND POSSIBLE DATA SOURCES

Research Objectives	Research Questions	Questionnaire	Interview	Document Analysis
To identify the types and forms of information literacy programmes (library instruction) being offered at the National Open University of Nigeria.	What are the types and forms of library instruction being practiced in the National Open University of Nigeria?	Section C: items 1-20 in the table	Section A of both interview schedule	Library Documents such as Orientation Manuals, Annual report
To examine the resources and facilities of the University Library in relation to information literacy skills development.	What are the information literacy resources available at the NOUN Library in relation to Information Literacy Skills development?	Section B: Question 2 Section D: items 1-10 in the table	Section B: of both interview schedule	University website/Library website
To assess the level of awareness of the students of the NOUN on the information literacy programmes in the University.	Are NOUN students aware of the information literacy programmes available to them in the University?	Section E: items 1-10 in the table	Section C of both interview schedule	University Library/school library attendance
To determine the competency level of information literacy among the students of the National Open University of Nigeria	What is the competency level of information literacy among the students of the National Open University of Nigeria	Section F: items 1-3 Section F: items 1-20 in the table	Section D of both interview Schedule	Grades assessment schedule of students on research methods
To determine the level of understanding between information literacy and lifelong learning amongst staff and students in the National Open University of Nigeria	What is the level of understanding between information literacy and lifelong learning amongst staff and students in the National Open University of Nigeria	Section G: items 1-20 in the table	Section E of both interview schedule	University Annual Reports and 2012-2017 strategic plan
To evaluate the information Literacy collaborative measures that exist in the National Open University of Nigeria?	What are the information Literacy collaborative measures that exist in the National Open University of Nigeria?	-----	Section F	Library Documents such as Orientation Manuals,

				Annual reports
To suggest strategies that may be adopted as far as the implementation of information literacy and lifelong learning is concerned.	<p>What problems are encountered in teaching information literacy skills to students?</p> <p>What are the possible strategies that should be adopted as far as the implementation of information literacy is concerned.</p>	Questions in all sections of the questionnaire	Questions G & H from the interview Schedule	

APPENDIX I

CONSENT FORM

Dear Prof/Dr/Mr/Mrs/Miss/Ms.....

Date...../...../.....

RESEARCH TOPIC

Information Literacy and Lifelong Learning in the National Open University of Nigeria

PURPOSE OF THE STUDY

The purpose of the study is to investigate the information literacy skills amongst students and to ascertain the level of IL development in the University.

1. The study requires your participation either through completing a questionnaire or interview.
2. Data collected during this study can be processed in a computerized system by the researcher.
3. There are no right or wrong answers and all opinions will be respected.
4. All participants will be given the opportunity to express their opinion and view.
5. Your attention is drawn to the fact that the interview will be recorded and transcribed.
6. You may request to peruse the information in the data in which you participated if you so wish.

CONFIDENTIALITY

The opinion and view of the participants are strictly confidential. No data publish in the thesis and/or journals will contain any information that will help to identify the participants.

Thank you.

Signed.....

Name.....

Date.....