ASSESSMENT OF DIGITAL LITERACY SKILLS OF FACULTY MEMBERS FOR TEACHING IN LIBRARY SCHOOLS IN FEDERAL UNIVERSITIES OF NORTH-EASTERN STATES, NIGERIA

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DECLARATION

I hereby declare that this project has been written by me SULEIMAN, Maryam Sabo with Registration number P14EDLS8182 and that it is a correct record of my own research work on the topic 'Assessment of Digital literacy skills of Faculty Members in the Department of Library and Information Science in the Federal Universities of North-Eastern States of Nigeria' under the supervision of Dr. Ezra S. Gbaje and Dr. (Mrs). M.F. Mohammed. All sources of information are specifically acknowledged by means of references.

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CERTIFICATION

This thesis titled "Assessment of Digital literacy skills of Faculty Members in the Department of Library and Information Science in the Federal Universities of North-Eastern States of Nigeria", meets the regulations governing the award of Master in Information Science (M.Sc) Degree of Ahmadu Bello University, Zaria-Nigeria and is approved for its contribution to knowledge and literary presentation.

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DEDICATION

By the glory of ALLAH (SWT), I dedicate this research work in memory of my Late Father Justice Sabo Suleiman, and also to my beloved Mother Hajiya Asabe Sabo Suleiman, and my sons Auwal Abubakar and Hamis Abubakar for their love, effort and support.

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Abstract

This research investigated the digital literacy skills of Faculty Members in the Department of Library and Information Science in the north-eastern states of Nigeria. Six research questions and one hypothesis were answered and data were analyzed using Statistical Package for the Social Sciences (SPSS), among the research questions there are; what is the ability of library and information science faculty member in the north-eastern states of Nigeria to locate Digital information? How do library and information Faculty Members in the north-eastern states of Nigeria critically judge and evaluate credible digital information. Quantitative research method was applied in the study using random sampling technique to draw the sample. Forty-four copies of the questionnaires were administered while thirty-seven copies were completed, returned and was used in the study which represents 84% of the response rate. The finding of the study revealed thatFaculty Members in the Department of Library and Information Science in the Federal University of North-eastern states of Nigeria were very confidents in the use of scanning/skimming techniques to quickly access the key relevant information on a web page, in assessing whether an online resources or persons credibility and trustworthiness. The study recommends some steps to turn around the situations; faculty members must be empowered with all necessary digital literacy skills, embark on rigorous training and retraining programs, workshops, conferences and seminars, there should also be a coherent training policy for the faculty members on a sustainable basis to increase their requisite digital literacy skill, emphasis should be given to digital technology components by the institutions so as to equip the faculty members with the requisite expertise, there is urgent need for the increase in the budgetary allocation to the institutions by the government in order to raise their Information and Communication Technology facilities affordability status.

CHAPTER ONE

INTRODUCTION

1.1 Background to the study

Teaching is the process of improving knowledge, planning, implementation, revision and evaluates new knowledge relevant for their core professional practice and to regularly update their knowledge base to improve their practice and to meet new teaching demands (Blomeke& Delaney, 2012). Teaching is usually obtained in academic environment such as primary, secondary and tertiary institutions like Universities. For effective academic activities in Universities teaching activity is observed in various departments that made up by faculties one of these departments is Department of Library and Information Science. In the University where Department of Library and Information Science Lecturers teach student different course in order to impact the knowledge of organizing, acquiring, processing, disseminating, and use via them some of the courses require are organization of Information, Introduction to Information Technology, Information Sources and Services, Information System in Library and Information Centers etc(Voss, Kunter&Baumert, 2011).

For effective teaching to be achieved recent development in Information and Communications Technology (ICT) have transformed how individuals access and use information for teaching and learning. ICT has acquired an important role in the learning process, both in the educational system and at home (Meyers, Erickson & Small 2013). The Internet, in particular, has made available a virtually boundless number of sources of information. As a resultof teaching and learning process extensively requires the ability to access, locate, extract, evaluate, organize and present digital information.

Digital technologies with their interactive and increasingly individualized digital services change people's habits and behavior, building new value models and vital clues. They are becoming an irreplaceable source of education and the development of new literacy. Digital technology enable immense amount of information to be compressed on small storage devices that can be easily preserved and transported. Digitization also quickens data transmission speeds. Digital technology has transformed how people communicate, learn, and work in the digital world. (Erstad, 2010).

'Digital' is the term used most often to describe the inclusion of new information and communication media in very many aspects of education, work, entertainment and social aspects of life. Previous terms used to describe this were 'online', 'networked', or 'computer-based'. Digital describes electronic technology that generates, stores, and processes data in terms of two states: positive and non-positive. Positive is expressed or represented by the number 1 and the non-positive by the number 0. Having understood the word digital it is also important to understand the word literacy (DaCoasta, 2010).

Literacy is the most frequently used term in the contemporary discussions of the digital in education. It is used to bring together knowledge, attitudes and skills, and so encompass the basic abilities to use digital devices and applications as well as allowing for the development of a level of critical, reflective and strategic capability in various areas of application and practice. The definition of 'literacy' thus has expanded and this can be demonstrated (for example) in the official definition proffered by the National Council of Teachers of English in the US in 2015 as "The ability to read, write, speak, listen, and use numeracy and technology, at a level that enables people to express and understand ideas and opinions, to make decisions and solve problems, to achieve their goals, and to participate fully in their community and in wider society.

Achieving literacy is a lifelong learning process". This literacy cannot be achieved without the skills (Bernard, 2012).

Skill is the ability and capacity acquired through deliberate, systematic, and sustained effort to smoothly and adaptively carryout complex activities or job functions involving ideas (cognitive skills), things (technical skills) and people (interpersonal skills) (Bernard, 2012). It is also important to understand the term 'digital literacy'.

Digital literacy is the "ability to understand and use information in multiple formats from a wide range of sources when they are presented via computers" (Gilster, 1997). Gilster identified that the growths in digital technologies required different set of skills, attitudes and competencies than the tools and operations focus on ICT in the previous two decades. He understood that the abilities to access, understand and critically analyze digital contents and applications were increasingly important in an information and technology abundant environment with that regard it is also important to understand digital literacy skills.

The concepts of digital literacy skills continue to evolve as new aspects of digital technologies gain distinction. The UK Futurelab's Handbook (2015) provides a definition based on creating and sharing: "To be digitally literate is to have access to a broad range of practices and cultural resources that are able to apply to digital tools. It is the ability to make and share meaning in different modes and formats: to create, collaborate and communicate effectively and to understand how and when digital technologies can best be used to support these processes."Digital literacy skills is "the ability to make, represent and share meaning in different modes and formats; to create, collaborate and communicate effectively and to understand how and when digital technologies can best be used to support these processes" (Hagel, 2012)

Digital Literacy skill is the ability to use information and communication technologies to find, evaluate, create, and communicate information; requiring both cognitive and technical skills (ALA, 2013). Digital literacy skill is a broad term that encompasses understanding, evaluating and integrating digital information; creating digital content; and taking action to share knowledge and solve problems. In a 2010 paper from the Aspen Institute, it was the array of messages they received, created, and shared one made informed decisions about everyday issues they faced.

During the 1980s and for much of the 1990s 'ICT skills' or 'computer skills' were the terms most frequently used and would have been understood to mean those skills and abilities necessary to operate the new computer-based technologies which might have included hardware and software. As described above, the modern concept of 'digital literacy skills' has evolved from this rather basic conception towards a set of more complex multi-literacy that is considered necessary to thrive in a digital world. The current concept now include knowledge and attitudes/dispositions - in addition to skills and "the awareness, attitude and ability of individuals to appropriately use digital tools and facilities to identify, access, manage, integrate, evaluate, analyze and synthesize digital resources, construct new knowledge, create media expressions and communicate with others in the context of specific life situations in order to enable constructive social action and to reflect upon this process" (Martin and Grudziecki 2010).

Library and Information Science Education in Nigeria today cannot be relevant without effective preparation of new generation of librarians to effectively use the new information and communication technology in their professional practices. The education and training of LIS professionals has to be such that it empowers them to unleash their potential as they endeavor to offer relevant and efficient services within the current levels of technological sophistication (Minishi, 2007).

Hagel (2012) observed that Library and Information Science (LIS) academic department have witness not only this increasing globalization of higher education but also that of the LIS work place including the consequent extension of competition beyond traditional, institutional, national and regional boundaries.

The practice of librarianship as studied by Gbaje (2007). But the question is how fastand how well is the change? Changes include the following:

- Moving from the traditional inward - looking orientation towards books to anoutward looking emphasis on information handling;
- The emphasis on collecting, processing, compiling and disseminatinginformation in support of students and researchers both inside and outsidethe institution;
- Transformation of traditional library into a new information service unit;
- New outlook, structure, skills and attitudes which some library staff cannotonly adapt to;
- Removal of the line between the library and teaching, learning and researchprocess;
- Integration of technology into every aspect of library function / provisions.

Further changes include:

- Educational institution gaining access to networked resources as a journaland databases, thanks to MTN and other agencies;
- New techniques of assessment are being introduced. Online tests aregradually becoming widespread and provide more information thantraditional multiple choice tests; and
- Information literacy is now an indispensible aspect of course programmes in many institutions.

Library and Information Science as a profession is concerned with knowledge and skills by which record of human communication is collected, organized and utilized. Devine, (2015)

suggests that many library educations have been enticed by the lure of modern communication technology and to concentrate in the technology and to dismiss areas of traditional teaching modules that do not fit with this technological boundaries. The "lure of modern communication technology" has taken a large role in LIS education. This assertion has been confirmed in the statement of Minishi (2007) looking at the Sub-Saharan, that the LIS schools that curriculum development has shown considerable strides in infusing digital skills as most LIS schools have developed relevant digital modules and or merged ICT relevant knowledge in traditional module.

1.2 Statement of the Problem

In the digital era faculty members are expected to be digital literates, which imply that they have the ability to use digital technology and know when and how to use it for their teaching and research work. Digital literacy is a key to teaching and the more digitally literate faculty members are the more they are able to employ and impact these skills on their students as well as prepare them for the future work place.

Faculty members interpret and implement the curriculum in academic programmes. Over the past few years library schools have reviewed the Library and Information Science Curriculum to reflect the developments and adoption of information technology in library and information services.Studies however have revealed that Library and Information Science curriculum for many library schools has components of digital information system and Information and Communication. Muhammad, (2000) stated that for Nigeria to meet in the Digital age Library and Information Science schools whose principles are to produce the right caliber of professionals mustbe revisited. Masters, (2012) also indicated that; for the Nigerian Library Schools to face the challenge of the 21st century, the information studies programmes in

the various Nigerian Library Schools should emphasize information technology both in the theory and practice. The new breed information worker needs to be well informed about the tools for practicing his or her profession. Bala, (2014) also stated that digital literacy skills are the factor to relevance in the scheme of things in the 21st century. This implies that faculty members of library school must be digital literate to effectively interpret and implement the curriculum.

Despite the importance of digital literacy skills in teaching and research, preliminary study conducted by the researcher observed that majority of faculty members in Department Library and Information Science in Federal Universities of North-Eastern States of Nigeria are not using digital technologies in their teachings; and student without the skills to use digital tools risk an inferior process at best and they are being behind in pursue of a job. Sandholtz& Reilly (2010) observed that lecturers' technology skills are strong determinant of digital integration, but they are not being used in the classroom; and that lead to the graduate student to find it very difficult to get job as 90% of jobs requiring some level of information technology competency. Devine (2015), also observed that among the factors that influence successful integration of digital technologies into teachings are lecturers' attitudes and beliefs towards technologies; and is the responsibility of the faculty members to develop student into individuals who could thrive in an era of digital information and technology because those who are digitally literate are more likely to be economically in higher education given that graduate white collar jobs are almost performed on computers and portable devices.Could it be as a result of lack of digital literacy skills? Hence this study accessedthe level of digital literacy skills of faculty members for teaching in Library Schools in Federal Universities of North-eastern states, Nigeria.

1.3 Research Questions

This research answered the following research questions:

1. What is the ability of Library and Information Science faculty members in North-Eastern States Nigeria to locate Digital Information?
2. How do Library and Information Science faculty members in North-Eastern States Nigeria critically judge and evaluate credible digital Information sources?
3. What are the levels of digital literacy skills of Library and Information Science faculty members in the North-Eastern States Nigeria to create digital contents?
4. How do Library and Information Science faculty members in the North-Eastern States Nigeria communicate using digital technology in teaching?
5. How do Library and Information Science faculty members in the North-Eastern States Nigeria integrate digital content in their teaching?
6. What is the challenges Library and Information Science faculty members in the North-Eastern States of Nigeria encounter in using digital technology when teaching?

1.4 Hypothesis

The following hypothesis was used;

Ho. There is no significant difference between Digital Literacy Skills and teaching of Library and Information Science in Federal Universities of North-Eastern States of Nigeria.

1.5 Objectives of the Study

The study aimed at achieving the following objectives:

1. To find out the ability of Library and Information Science faculty members in North-Eastern States Nigeria to locate Digital Information.
2. To examine how Library and Information Science faculty members in North-Eastern States Nigeria critically judge and evaluate credible Digital Information sources.
3. To ascertain the levels of Digital Literacy Skills of Library and Information Science faculty members in the North-Eastern states Nigeria to create Digital Contents.
4. To find out how Library and Information Science faculty members in the North-Eastern states Nigeria communicate using Digital Technology in teaching.
5. To investigate how Library and Information Science faculty members in the North-Eastern States to integrate digital content in their teaching.
6. To ascertain the challenges Library and Information faculty members in the North-Eastern states Nigeria encounter in using Digital Technology when teaching.

1.6 Significance of the Study

The study is useful to the faculty members in the Department of Library and information Science in the North-Eastern states in the sense that it wouldreveal the levels of digital literacy skills among the faculty members and how they could be improved. The results of this study could also be used by relevant stakeholders to produce Library and Information Science graduates who will work effectively in the digital work environments.

The outcome of this study serves as an outline for faculty members to teach the accurate route of achievement for the applying of digital literacy skills in furthering education.

1.7 Scopeof the Study

The scope of this study covers basically Assessment of Digital Literacy Skills for teachingand target subject will be the Library and information faculty members that are working in the Federal Universities of North-Eastern states. Which comprise AbubakarTafawaBalewa University Bauchi, MadibboAdama University of Technology, Yola and University of Maiduguri.

1.8 Operational Definition of Terms

The concepts below are defined within the context of their application in the study as follows:

Assessment: Is the act of judging the amount, value, quality or importance of something such as digital literacy skills of faculty members in library schools of North-Eastern State, Nigeria.

Digital Literacy skills: Is the ability of the faculty members of Dept of Library and Information Science to use information and communication technology to create, retrieve, and evaluate information required both cognitive and technical skills in Federal Universities of North-Eastern State of Nigeria.

Digital Contents: Is Information available for download or distribution on electronic media such as an eBooks or iTunes song.

Digital Tools: Is machines that are used to store Information it could be inform of video, images etc.

Faculty Members: Are lecturers that are teaching in the universities.

Library Schools: Is a place where they are teaching Library and Information Science as a profession.

Teaching: Something that is taught by professionals to learners.

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CHAPTER TWO

REVIEW OF RELATED LITERATURE

2.1 Introduction

This chapter examines the earlier works that were carried out by researchers in area of Digital literacy skills of faculty members. The review is presented under following sub-headings:

2.2 Concept of Digital Literacy Skills.

2.3 Components of Digital Literacy Skills for teaching.

2.4 Conceptual model of Big6 Skills for information Literacy

2.5 Ability to locate digital informationby faculty members.

2.6 Judge and evaluating credible digital information by faculty members.

2.7 Ability to create digital content by faculty members for teaching.

2.8 Communicating/ teaching using digital technology by faculty members.

2.9 Integrating digital content in teaching by faculty members.

2.10 Challenges normally encountered in using digital technology by faculty members.

2.11 Review of empirical Studies on Digital Literacy Skills.

2.12 Summary of the review.

2.2 Concepts of Digital Literacy Skills

Digital Literacy skills have led to great increases in information that can be conveniently and quickly accessed and facilitate the collaboration and sharing of computer knowledge. With other forms of digital literacy skills, one is also seeing an increasing on digital modes of communication. Word processing is now the standard for writing and there has been a global up come of e-mail and usage of URL. Students must develop knowledge about how to use ICT Technology to construct meaning, but most importantly in ways that are appropriate to their

needs. Computer is very important because they are applied in almost all the fields in the Modern Era (Aharon, 2008).

Digital Literacy Skill is increasingly being recognized as a powerful enabler for economic and social development. Digital Literacy can advance economic growth, enhance social inclusion, increase health and education services and improve governance at all levels. The engine that drives the deployment of knowledge and information is what we collectively called Digital Literacy. It isthe pipes and mechanisms through which knowledge and information are packaged and transmitted, to be unbundled for deployment at the receiving end; by virtue of the vast technologies and applications which have come to be (and are continuously being) developed through innovation, Digital Literacy Skillshave becomeso important to virtually all aspects of life, activities and operations, from research and development to industrialization, from health services to entertainment, from education to systems of governance, that they have become fundamental to basic life. Information technologies are rapidly transforming the content of and services of libraries and information centers worldwide (Abbas 2010).

Digital Literacy Skill is the combination of the two terms – Digital and Literacy. Digital Information is a symbolic representation of data, and literacy refers to the ability to read for knowledge, write coherently, and think critically about the written word. Digital literacy researchers explore a wide variety of topics, digital technologies (Birger,2008). Digital Literacy Skills is the ability to locate, organize, understand, evaluate, and analyze information using digital technology. It involves a working knowledge of current high technology, and an understanding of how it can be used. Digitally literate people can communicate and work more efficiently, especially with those who possess the same knowledge and skills. Research around digital literacy skillis concerned with wider aspects associated with learning how to effectively

find, use, summarize, evaluate, create, and communicate information while using digital technologies, not just being literate at using a computer (Faloki,2005).

The implication of transporting library services to the online environment for the Nigerian academic libraries in the digital age are enormous particularly with the dynamic nature of digital technology which is constantly creating the need for new skills, work environment and work methods since faculty members are the link between the information and the students. The biggest problem that is facing most organizations today is how to ensure maximum utilization of its potentials especially knowledge within the organization and how to leverage this knowledge to gain competitive advantage. Knowledge management is an emerging concept that aims to leverage information and collective wisdom to increase responsiveness, productivity and innovations. Knowledge management can be described as a systematic process of finding, selecting, organizing and presenting information in a waythat improves the employees' comprehension in a specific area of interest(Gbaje, 2009).

2.3 Components of Digital Literacy Skills for Teaching

In the recent decades, there is growing evidence and perception that the teaching is rapidly evolving from a hard-material-based infrastructure towards a digital one, and less obviously, from a craftsmanship operations towards a fully automated one. Hagel (2012) explained that for an individual to be digital literate he must posess those skills which include:

Computer Literacy

With the use of computer teachers can teach students how to locate and retrieve files in various directories, Save those same files in multiple locations (flash drives, My Documents, network folders); recognize and save files in various formats (i.e.bmp, .jpg, .pdf, .html, etc.);

create folders to organize files; Rename files; Delete files; Select appropriate printer and print; choose appropriate page setup features; use multiple ways to accomplish the same task.

Communication Literacy

Reading and writing are creative tasks, requiring both the building and breaking down of words or "tinkering." As literacy develops, a student's toolbox grows, and the forums in which students can build grow too. You can help students transition from what frequently is their comfort zone to more in-depth commentary, such as a written blog. Create simple tools for your class like flexible, common rubrics, to enable students to self select topics, publish journals, music, or videos weekly. These short, on-demand duration tasks not only build writing stamina and ownership of their craft, they also reinforce the iterative nature of communication.

Media literacy

A person's ability to perform tasks effectively in a digital environment includes the ability to read and interpret media, to reproduce data and images through digital manipulation, and to evaluate and apply new knowledge gained from digital environments. Many teachers have started to supplement traditional curriculum with everything from video to online articles. But simply adding in new content is not enough. We must instill a complementary skill set that enables students to closely read things within those mediums. Believe it or not, this can be done with lessons you currently have with a bit of tweaking.

Technology literacy

Is the ability of an individual, working independently and with others, to responsibly, appropriately and effectively use technology tools to access, manage, integrate, evaluate, create

and communicate information. Includes all electronic tools, both hardware and software, that assist an individual in his/her ability to acquire and communicate information.

Visual Literacy

Ability to critically use images to understand the economic, legal and social issues surrounding the use of digital images access and use of image information ethically and legally. Visual literacy is about analyzing and creating messages. Images can be used to influence and persuade, so it is incumbent upon educators to learn how to teach with and about images and to help our students understand the language of photography.

2.4 Big6 Skills for Information Literacy

These information processes models provide road maps for implementation and instruction of information literacy skills in the curriculum. Big6 approach was developed by Mike Eisenberg and Bob Berkowitz (1990). The Big6 guide learners as they embark on information problem solving activities, and provide educators with a framework for teaching the research processes and including information technology skills in the curriculum. It was developed from practice, observation, and work by Eisenberg and Berkowitz in a number of different teaching and learning situations and across grade and student age groups.

The Big6 Skills are comprised of unified set of information and technology skills that-taken together form a process. The process encompasses six stages from task definition to evaluation. Big6 approach includes systematic sets of activities. It also provides a broad based, logical skill set that can be used as the structure for developing a curriculum, or as the framework for a set of distinct problem solving skills. For teachers, the Big6 provides definitive sets of skills that students must master in order to be successful in any learning context. For students, the Big6

provides a guide to dealing with assignments and tasks as well as a model to fall back on when they experience difficulties during information problem solving.

Stages of Big6 Models

Described below is the six step approach of Big6 skills information literacy model.

Task definition: the first part in the information problem solving process involves recognizing an information need exists, defining the problemand identifying the types and amount of information needed in order to solve the problem. They should have a clear hypothesis, a specific question, and a clear understanding of what is needed in order to answer that question. This can be done by communicating with teachers, subject area expert using e-mail, online discussion or brainstorm.

Information seeking strategies: in this stage, once the information problem has been formulated it requires teachers first to identify all the possible sources of information, develop a plan and then determine which source is best for them to use. They should be able to assess the value of various types of electronic resources, primary resources, use a computer to generate modifiable flow charts and as well use handheld devices such as personal digital assistants (PDAs).

Location and access: after you determine your priorities for information seeking, you must locate information from a variety of resources and access specific information found within individual resources. These will enable you to locate appropriate computer resources and technologies available throughout the institution and within the library and also use the internet.

Use of information: is comprised of traditional bibliographic skills. Teachers should not only find individual resources such as books, magazines, reference materials, and Web sites, but

also find the information within each source through the use of table of contents, indexes, and other resource specific tools. Next, they must engage each source (read, view or listen) and extract specific information from it through the application of note taking, highlighting, and summarizing.

Synthesis: Teachers shouldorganize and communicate the results of the information problem solving effort, requiring them to make a decision, create a product, or formulate an answer. Synthesis is linked to task definition in that students are expected to answer the specific question they created when initially engaging in the problem solving process.

Evaluation: requires teachers to evaluate not only their final product (whether it is a decision, paper, etc.), but also to evaluate how well they performed when the information problem solving task. Evaluation focuses on how well the final product meets the original task (effectiveness) and the process of how well teachers carried out the information problem solving process (efficiency). Teachers may evaluate their own work and process or be evaluated by others (that is, classmates, tutors, library staff, parents).

The process is often not linear and stages may be repeated throughout the process. The development of the Big6 was informed by practice, but it has been employed as a conceptual framework in several studies of information problem-solving. Brand-Gruwel, Wopereis, &Vermetten, (2009) studied expert and novice higher education students in an effort to decompose the Big6 information literacy approach into cognitive components, and to determine the key components in the information problem-solving process. They conclude that the Big6 information literacy approach was an accurate description of stages in information problem-solving, and useful in the decomposition of cognitive components into related categories.

With these regards the researcher used four stages of Big6 modelto answer some of the research questions to access the level of digital literacy skill of faculty members in the Department of Library and Information Science in North-Eastern States of Nigeria.

2.5 Ability to locate digital information by faculty members

With the dramatic increase of articles found online, the ability to locatedigital information in databases rather than just on the shelf is critical. Understanding the difference between a keyword and subject search and the benefits of using truncation symbols, Boolean operators, and synonyms can mean the difference between a successful search and frustration. Doctoral students, especially those returning after years out of the academic environment benefit from instruction in these digital literacy skills.

Effective and efficient search for materials in digital format is expected to enhance the quality of teaching and research by faculty members of any institution. In Nigeria, the use of computer terminals in information searching is gradually gaining popularity and so the librarians need to be computer literate. Thus, many Nigerian university libraries are striving to be fully automated while some are still in the process of computerization. To derive maximum benefit from the increasingly electronic library use environment, the librarians need to be computer literate (Emwanta and Nwalo, 2013). Digital information provides a number of benefits over print resources. These benefits include the fact that digital information are often faster to consult than printing indexes especially when searching retrospectively, and they are straight forward when wishing to use combination of keywords. They open up the possibility of searching multiple files at a time:digital information can be printed, searched and saved to be repeated or consulted at a later date- They are updated more often than printed resources. Commenting on the advantages of digital information, Dadzie (2009) cited in Egberongbe (2011) that digital information are invaluable research tools that complements the print – based

resources in traditional library settings. Their advantages, according to her include: searching for information that might be restricted to the user due to geographical location or finances, searching for more current information, and provision of extensive links to additional resources of related contents.

Search engines such as Google (www.google.com) facilitate rough and ready searching of literally millions of information resources of varying quality, yet mediation can help in expressing a user's anomalous state of knowledge (Rumsfeld's known unknowns). Kate Wittenberg, Director of the Electronic Publishing Initiative at Columbia University, has noted the importance of this role: "libraries help people formulate questions as well as find answers [. . .]. Who will do that in a virtual world?" Librarians can also assist in guiding users to information resources of quality (kite-marked, for example, by peer review)(Jetty, Sridevi, Hopkinson &Alan, 2010). Such resources within educational establishments are usually free at the point of use. This direct access to costly commercial information services exists side by side with freely available online resources. Information Literacy helps with the usage of technical layering of virtual information services and sources, through online library catalogues and virtual learning environments by emphasizing that information often has to be synthesized with a wider body of knowledge in order to be useful.

Digital literacy is a key to teaching in order to provide the skills, knowledge and understanding for librarians to enter the workplace, further education and higher education. Increasingly, digital literacy is becoming the primary form of information transfer and communication, taking over from letters, phone calls and even face to face interaction. Business transactions without face to face contact would have been rare twenty years ago.

Digital literacy involves using emerging Technologies to communicate meaningfully across technology, social language, cultural and intellectual barriers (Lonka, 2010).

Digital information and the development of electronic information search skills have become part of academic life for . In universities around Nigeria, electronic information use is beginning to be incorporated in library services.It is a common belief that empirical data provides supporting evidence--that some people are more proficient in performing online searches than others (Gillen &Marton, 2010). Precision, the proportion of the retrieved digital information that are relevant to the query, and recall, the proportion of the relevant documents that were retrieved by a particular query, are the measures generally used to evaluate differences in search performance. In addition, measures of search term overlaps and search efficiency are sometimes reported.

Finding relevant citations in a traditional bibliographic database, however, differs from searching for specific information in a full-text database with regard to the target of the search. Specifically, the target of a search in a factual database is often a highly circumscribed set of facts or concepts, while the target of a search in a bibliographic database is usually a broader set of citations that are relevant to a query (Barbara, 2011). In this way, searching a factual database more closely resembles searching an encyclopedia (Huvila, 2012), or searching for a known item in a bibliographic database (Hague, 2010). This difference in the target of the search may have important implications for the searcher's success in locating the relevant item(s), the terms selected during the process of searching, and the efficiency with which the search can be performed.

2.6 Ability to judge and evaluate credible digital information.

Evaluation implies the process of obtaining and providing useful information for decision making. It is a process of making value judgment as to the possession of desirable attributes (Gesinde,Adejumobi and Komolafe, 2007). Flanagin and Metzger, (2011), explan that the main purpose of evaluation is for decision making supported this assertion and stressed that evaluation is a process of gathering information for decision making. It helps to determine the effectiveness or otherwise of a new programme (e-resources). In the same way Ugodulunwa (2008) posited that evaluation is the process of making value judgment about the worth of a thing. It includes obtaining information for use in judging the worth of a programme, product, procedure or objective in education.

Similarly, Woolfolk (2014) explained that the heart of evaluation is judgments, making decisions based on values; it is the process of comparing information with criteria for decision making. The need for evaluation of digital information cannot be over emphasized especially in this era when university budget is dwindling. Since the last two decades, the Internet has become integrated into our lives as an important, if not indispensable tool for information and communication. The plethora of information available online, coupled withheavy reliance on the Internet by information seekers raise issues of the credibility or quality of information foundonline(Miriam, Metzger, Andrew & Flanagin,2013).

It is also is understood that the credibility of a source or message is a receiver-based judgment which involves bothobjective judgments of information quality or accuracy as well as subjective perceptions of the source's trustworthiness, expertise, and attractiveness (Miriam, et. al,2013).

The culmination of all this is that the Internet hasmade the need to critically evaluate information moreimportant than ever before while also shifting the burdenof credibility assessment and quality control from professionalgatekeepers onto individual information seekers.Developing the skills to evaluate Web-based information,then, is crucial for Internet users; however, there isevidence that many people are unprepared for this responsibilityand may have trouble determining how to assessthe credibility of online information (Flanagin and Metzger, 2011).

A key starting point for the digital literacy movement was the understanding that the skills needed to determine the quality or credibility of digital information are largely the same as those for evaluating information found in other channels of communication (Ala-Mutka, 2011). Based on that, the literature identifies five criteria that users should employ in their assessments of the credibility of Internet-based information: accuracy, authority, objectivity, currency, and coverage or scope (Ala-Mutka, 2011).

Accuracyrefers to the degree to which a Web site is free from errors, whether the information can be verified offline, and the reliability of the information on the site.

The authority of a Web site may be assessed by noting who authored the site and whether contact information is provided for that person or organization, what the author's credentials, qualifications, and affiliations are, and whether the Web site is recommended by a trusted source.

Objectivityinvolves identifying the purpose of the site and whether the information provided is fact or opinion, which also includes understanding whether there might be commercial intent or a conflict of interest on the part of the source, as well as the nature of relationships between linked information sources (e.g., the meaning of "sponsored links" on a Google search output page).

Currencyrefers to whether the information is up to date.

Coveragerefers to the comprehensiveness or depth ofthe information provided on the site. These recommendations require a range of activities on the part of users, fromsimple visual inspection of a Web site to more laborious information verification and triangulation efforts.

2.7 Ability to create digital content by faculty members for teaching

Schools and educators today have heightened sense of urgency towards understanding how educational technology can both support new curriculum standards and enable engaging and relevant classroom learning experiences. Increasingly, educators are turning to the implementation of digital content such as eBooks, videos and interactive simulations in the classroom to address both challenges. Per the national Speak Up 2014 research in the United State of America, 61 percent of educators noted that the use of digital content in their schools was already producing enhanced student achievement; in 2013, only 42 percent of educators noted that same impact (Smith & Anderson, 2010).

The use of digital content transformed the learning experience for the students by increasing students' interest in the subject matter. The increased student engagement resulted in new learning behaviors and attitudes.Sophisticated instruments and practices of knowledge creation given to studentsmay extend their minds. New technologies may help our students augment theirpersonal and collaborative intellectual resources in a way that makes digital creationfeasible. This does not happen without scaffolding of the surrounding learning environmentand more experienced peers, parents, and teachers (Ritella&Hakkarainen, 2012).

Also the use of tablets and mobile platforms has become part of everyday experience and we have seen the popularity of ideas such as MOOCs (Massive Open Online Courses) and of open educational resources, of BYOD (Bring Your Own Device), and of the flipped classroom and fully online learning. The mainstreaming of badges, gamification and learning analytics is

just ‘on the horizon’, and 3D printing and wearable technology are expected to be considerably more widespread by 2018as well as the use of wiki linked (New Media Consortium 2014).

A wiki is a collection of linked web pages accessible for editing and shared by several people together. The term "wiki" describes both the pedagogical approach and the technological tool, oneexample of the significance and impact of technology on pedagogy. Wikis have a variety of uses: A surveyconducted in 24 universities (Area, 2010) points to the wiki as a tool for creating interactive activities,advertising content, viewing collections of information, projects, FAQ collections, and even as textbookslearners view the wiki as a valuable learning tool. A wiki environment is essentiallydifferent from other environments where there is dialogue between learners. The basis of the wiki is the article ortext, on which the activity is performed. On the other hand, discussion groups, e-mails, blogs based on an ordered or hierarchical chain of responses should be evaluated accordingly. Wiki platforms may also serve the needs forassessment of cooperative learning and are effective for measuring cooperation because they contain records of thecontent edited by all students on each page(Area, 2010).

The importance of active personal andcollaborativeengagementof students in their learning processes is that they are able to share objectives,produce artifacts in teams, and apply both self-reflection and peer review. Such processesare central to knowledge creation as it is understood in this context. Activities thatpromote knowledge creation provide guidance and socialize participants into authentic query-based practices, such as posing questions, designing experiments, analyzing and interpreting results, and thereby cultivating technology skills and acquiring a coreunderstanding of the “nature of technology”(Juuti, Loukomies, &Lavonen, 2013).

2.8Communication or teaching using digital technology by the faculty members

Digital communication is the use of digital devices and mobile technology to share knowledge, manage information, and contribute user-generated content to communities or teams of people. Dramatically different from traditional communication, it encourages a continued connection to a broader network of participants at all times. Digital communication includes the use of digital shared notebooks and coauthoring to capture and exchange information; the creation of digital maps and illustrations to visually express data for better understanding or remembrance and the sharing of information via web-based links that allow it to be retrieved from any device. The result is greater worker mobility and flexibility enabling a potential increase in productivity along with the keener awareness of projects that comes from more proactive sharing (Common Wealth of Australia, 2011).

Most professionals already employ some level of digital communication work strategies in their daily routines, from flags and categories in outlook to screen and document sharing technologies. We believe there are significantly more opportunities and also mobile devices the information sharing and social applications are constantly creating new opportunities to be more productive and informed when used effectively (Masters, 2012).We see the potential benefits of better technology adoption as reduced stress, increased productivity, and ultimately greater preparation and success allow professionals to find new sources of inspiration, tap into fresh and unexpected resources, and expand their networks. Those who participate in this context can make better decisions based on information provided by massive communities who share the same experiences (Masters, 2012).

Majority of computers at the school are housed on round tables to allow better communication and all the students are required to study the 'Learning to Learn' programme which aims to teach students the skills and attributes they need to become better independent learners (Braun, Maguire, and Ball, 2010).Students were asked to think carefully and critically about how to use digital technologies to create and communicate political messages, which involved students analyzing and replicating the trans-media marketing methods employed by political parties to create effective communication through print and video (Hague& Payton,2010).

Similarly, Futurelab (2010) argued that the students take control and show their work the students at the school spoke passionately about these projects describing one particular example where they were able to choose between making a video or a PowerPoint presentation to communicate their learning. The primary aim was to allow students to work in a way which suits their preferred learning style and to communicate about the issues that were important to them, whilst also developing their ability to engage in independent learning and encouraging them to think about what digital format is most appropriate for them to communicate their message.

Ultra-mobile personal computers (UMPCs) are used for a variety of purposes both in the school and at home. Students have used them to complete internet research aswell as using Google sketch up, making films with Movie Maker,making podcasts with handheld microphones that plug into theUMPCs and writing stories with 'create a superstory', which is a piece of software that allows children to create multi-media stories using animation and their own text and drawings which can then beshared. Online students are often given support to choose when theywould like to use their UMPCs for a particular piece of work and whenit may be better to use a different non-technological tool.The idea behind the scheme is that giving studentsthe

opportunity tolearn digitally will support their development of subject knowledge aswell as increasing their ability to participate in the digital world. The way in which the UMPCs movebetween home and school has been integral to the success of theproject. Students report using the UMPCs at home to follow their owninterests and teachers suggest that students are "bringing stuff in toshow you what they have done at home, and that a closer relationship istherefore beginning to develop between students out of school digitalliteracy practices and their in-school learning.They aim to support students to develop their use of technology for a variety of creative and critical learning purposes (Luckin, 2010).

Investigations of Professor Kai Hakkarainen and his colleagues revealed that students who were supported by proper instruction and collaborative technologies were able to pursue challenging inquiries in their studies. Furthermore, investigations of supportive technology-enhanced learning provided clear evidence that technology-enhanced process of Investigative Learning or Inquiry-Based Science teaching or Learning by Collaborative Designing do in fact it foster students' learning engagement at various levels of education because of digital technology (Hakkarainen, Paavola, Kangas, &Seitamaa-Hakkarainen, 2013).

Digital technology tends to expand access to education. Through digital technology, learning can occur anytime andanywhere. Online course materials, for example, can be accessible 24 hours a day as well as seven days aweek. Teleconferencing classrooms allow both learner and teacher to interact simultaneouslywith ease and convenience. Based on technology, learning and teaching no longer depend exclusivelyon printed materials. Multiple resources are abundant on the Internet and knowledge can beacquired through video clips, audio sounds, and visual presentation and so on. Current research has indicated that digital technology assists in transforming a teaching environment into a learner-centered one. Since learners are actively

involved in the learning processes in technology classrooms, they are authorized by the teacher to make decisions, plans, andso forth. Digital technology therefore provides both learners and instructors with more educational affordances and possibilities (Lu, Hou and Huang 2010).

2.9 Ability to integrate digital content in teaching, learning and research

Digital content can be designed and developedwith flexibility and customization capabilities at the outset, reflecting the principles of universaldesign, and can be revised in a moretimely manner than the labor-intensive and costly processof updating traditional, static materials like printed textbooks(Juuti, Loukomies, &Lavonen, 2013). Furthermore, when developed as openeducational resources (OER), high-quality digital learning materials can be broadlydisseminated and modified by other educators to meet their students' needs and interests. Inother words, digital content can be designed, created, and refined over time in a way thatrecognizes and responds to the full spectrum of learner variability and, where this content islicensed as OER, these tools can be shared across classrooms and modified, asappropriate, to meet individual student needs with the use of digital resources (Juuti, et. al, 2013)..

Digital resources and well-designed curricula will only achieve optimal results in the21st century classroom if educators have a foundation of basic computing skills.College and university level teacher education programs should requireeducational technology courses for graduation. When new teachers enterschool systems, they must come prepared with computing skills to seamlesslyintegrate technology into their classrooms. So that students would be ableto demonstrate a solid foundation of computing skills and experience.Employers reviewing job applications and interviewing candidates expectand require certification of digital literacy standards. This validation enableemployers to confirm and be assured individuals have the

digital skills tofunction productively, efficiently and competently in the workplace (Blikstein, 2013).

Some recent studies have investigated current classroom practices around digital pedagogies for literacy. For example Oakley (2008) investigated using a language experience approach with digital storytelling using power point with voice recordings and Ciampa (2012) studied the use of electronic storybooks to increase reading motivation. Both found the methods successful in motivating students and teaching an aspect of digital literacy.

Recent research has indicated that digital literacy skill is socially constructed, is active and engaging and incorporates diverse knowledge systems. The researchers note that there are challenges for staff to provide "personalized learning experiences using suitable learning technologies that cultivate independent learning skills, while also scaffolding learner reflection and the development of generic competencies"like video games (McLouglin& Lee, 2010).Video games engage players by allowing themto see the impacts of their actions instantly. In the classroom, provideimmediate, useful feedback and meaningful assessments. Help studentsunderstand what works for them and how it helps them achieve their goals and the value of their learning and how it impacts their environment. Remember, students need to see how learning is relevant to their lives (Walsh,2011).

Studies show that in the UK, two key digital technologies have been introduced across the nation-These are presentational medium interactive whiteboards and visualizers and integrative technologies collectively termed learning platforms. The former can be described as easy-entry technologies because they fit with many teachers' current practices; the latter are more challenging and require greater effort by practitioners before they can be utilized effectively (Underwood, Baguley, Banyard, Dillon, Farrington-Flint, & Hayes,2009).

The level of skill, confidence, and knowledge learners have when using digital technologies will impact on the quality of their use of the technology. While most learners express very positive attitudes towards technology for learning and are confident users, there are skills gaps. Individual differences include attitude towards school and using technologies for learning and access to, and use of technologies (Higgins, 2009).

2.10 Challenges encountered in using digital technology in teaching

Access to digital infrastructure and resources in schools is a necessary condition to the integration of digital skills in education (Plomp, Anderson, Law, & Quale, 2009). Effective adoption and integration ofdigital technologyinto teaching in schools depend mainly on the availability and accessibility of digital resources such as hardware, software, etc. Obviously, if teachers cannot access digital resources, then they will not use them. Therefore, access to computers, updated software and hardware are key elements to successful adoption and integration of technology.

To successfully initiate and implement educational technology in school program depend strongly on the teachers' support and attitudes. It is believed that if teachers perceived technology programs as neither fulfilling their needs nor their students' needs, it is likely that they will not integrate the technology into their teaching and learning. Among the factors that influence successful integration of ICT into teaching are teachers' attitudes and beliefs towards technology (Keengwe and Onchwari, 2008). If teachers' attitudes are positive toward the use of educational technology then they can easily provide useful insight about the adoption and integration of ICT into teaching and learning processes.

Personal characteristics such as educational level, age, gender, educational experience, experience with the computer for educational purpose and attitude towards computers can

influence the adoption of a technology, (Schiller, 2003). Teachers are implored to adopt and integrate ICT into teaching and learning activities, but teachers' preparedness to integrate ICT into teaching determines the effectiveness of the technology and not by its sheer existence in the classroom (Jones, 2011).

Institutional factors help to improve teachers' existing attributes. According to Vannatta& Fordham (2004), lecturers time committed to teaching and amount of technology training are reliable factors of technology use in classroom. They asserted that teacher trainers and administrators should not only "provide extensive training on educational technology, but should also facilitate a contribution to teaching improvement". Lecturers professional development is a key factor to successful integration of computers into classroom teaching. Several studies have revealed that whether beginner or experienced, digital related training programs develop teachers' competences in computer use influence teachers' attitudes towards computers as well as assisting teachers reorganize the task of technology and how new technology tools are significant in student learning (Plair, 2008). Muller, Wood, Willoughby, Ross, &Specht (2008) related technology training to successful integration of technology in the classroom.Sandholtz& Reilly (2004) claim that lecturer's technology skills are strong determinant of digital integration, but they are not conditions for effective use of technology in the classroom. They argue that training programs that concentrate on ICT pedagogical training instead of technical issues and effective technical support, help teachers apply technologies in teaching and learning.

Similarly, Jones (2004) reported that the breakdown of digital tools cause interruptions and if there is lack of technical assistance, then it is likely that the regular repairs of the digital tools will not be carried out resulting in teachers not using digital tools in teaching. The effect is

that teachers will be discouraged from using digital tools because of fear of equipment failure since no one would give them technical support in case there is technical problem. Becta (2004) agreed that "if there is a lack of technical support available in a school, then it is likely that technical maintenance will not be carried out regularly, resulting in a higher risk of technical breakdowns."

2.12 Review of Empirical Studies on digital literacy skills

Study conducted by Leah, C.C. Fox on effect of technology on literacy skills and motivation read and write is an initial investigation into how technology affects one student's literacy learning and motivation in the reading and writing. Over a period of five weeks, he incorporated technology into instruction and then observed how it affected the student's motivations and skills while reading and writing. He conducted observations, interviews and retellings to gather all data. The primary goal of this study was to answer the research questions 1) what effects do digital illiteracies have on a struggling reader and writer as well as his/her motivation to read and write?, 2) what additional factors influence the student's reading and writing?. Through the completion of the analysis he concludes that technology may be effective for the struggling readers and writers who are considered to be digital natives. He also concluded when teaching, reading and writing, the use of both traditional and twenty first century strategy may be an effective strategy to improve literacy skills. Through the research he was also able to concluded that positive parental involvement may have a direct correlation on a student's improvement with reading and writing skills. This research suggest when student is unfamiliar with the technology being used there is no significant improvement with the skills.

Another study conducted by GianlucaArgentin, Marco Gui, Laura Pagani and Luca Stanca in the University of Milan, Bicocca on the impact of digital literacy on educational outcomes: evidence from performance testthey investigates that digital skills are important for labor market outcome, as they provide an increasingly critical kind of labor input. It is not clear, however, if digital skills also contribute to the acquisition of more traditional academic skills. This paper merges data from the Invalsi questionnaire and from an original new data set on second-year upper secondary school classes in the Lombardy region to study the effect of digital literacy on educational outcomes. An in-depth standardized test to investigate the level of digital skills has been developed with the aim of measuring the main aspects of digital literacy. At descriptive level, a strong positive relationship exists between digital skills and academic achievement. However, when we use instrumental variable regression we find no evidence that digital skills have positive effect on academic achievement. Therefore, the positive relationship found is driven by unobserved confounding factors influencing simultaneously digital skills and academic achievement. Overall, our results cast strong doubts that digital skills do a lot to develop students' educational performance in the current school system.

Another study conducted by Catalina Iordache, IlseMariën and DorienBaelden on the Developing Digital Skills and Competences: A Quick-Scan Analysis of 13 Digital Literacy Models investigates that the development of digital literacy has become a key element on the agenda of scholars, practitioners and policymakers worldwide. To this end, actors in the field often make use of conceptual models on digital literacy. As these models inevitably play a role in shaping the public debate on digital literacy, it is important to gain insights into the concepts and ideas they put forward. This article aims to: (1) unravel the complexity and diversity of

concepts regarding digital skills, literacies and competences; (2) identify the concepts promoted in 13 selected models on digital literacy; and subsequently (3) analyze the concepts that shape and/or dominate the scholarly and public debate on digital literacy. The results of this article are based on a literature review and quick-scan analysis of 13 digital literacy models that have been published and used by actors in the field between 2004-2014. The frameworks were mapped in a matrix and compared on the basis of 39 indicators, clustered in five categories: operational, technical and formal; information, cognition; digital communication; digital content creation; and strategic. The results of the analysis point towards an unbalanced focus on certain skills and competences, with particular emphasis on a series of operational, information-searching, and communication skills.

2.12 Summary of the review

This chapter reviewed the components of digital literacy skills and the concept related to the research questions. The chapter reviews Big6 conceptual model of information literacy out of which four stages of the model were modified and adopted for this study.

Review revealed that faculty members locate digital information through search engines such as goggle, online databases. The literature review revealed that to critically judge and evaluate digital information is crucial for internet users also revealed that in UK teachers teach their student how to communicate and collaborate using digital technologies like teleconferences, PowerPoint presentations, also literature revealed that educators in the United States of America create and integrate digital content such as e-book, videos, and mobile applications in their teaching, but no literature reviewed on the digital literacy skills of faculty members in library schools of federal Universities of North-Eastern states of Nigeria.

Therefore, this study is designed to access the level of digital literacy skills of faculty members in the Department of Library and Information Science in the North-Eastern states of Nigeria. This is the gap study will fill in the literature

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CHAPTER THREE

RESEARCH METHODOLOGY

3.1 Introduction

This section describes the procedures to be employed for the study under the following sub titles: research method adopted, population of the study, sample and sampling techniques, instrument for data collection, validity of the instrument, reliability of the instrument, procedures for data collection and procedures for data analysis.

3.2 Research method adopted for the Study

This research study adopted a quantitative research method and the research design adopted wassurvey design. This is because survey design allows the selection of random samples from large and small populations to obtain empirical knowledge of a contemporary nature. The survey research design is also used to assess a situation with a view to correcting inadequacies or effecting improvements. Oyedum (2011), stated that surveys are used extensively in library and information science to assess attitudes and characteristics of a wide range of subjects and can be useful when a researcher wants to collect data on phenomena that cannot be directly observed. Nwargu (1991) defined survey research as one in which a group of people or items are studied by collecting and analyzing data from only a few people or items considered to be representative of the entire population.

The survey research design was used for this work because of the nature of the study, as it enabled the researcher to reach out to the study population in their different locations. In addition, the survey design was adopted because the work is mainly interested in describing the

certain variable in the relation to the population, also based on the qualities and nature of survey research design. The researcher considered it appropriate to adopt the research design since the study assessed the digital literacy skills of faculty members in the Department of Library and Information Science in Federal Universities in North-Eastern State Nigeria.

3.3 Population of the Study

The population of this study is 44 comprisingthe faculty members of the Department of Library and Information Science at the North-Eastern States of Nigeria. Adamu and Johnson (1997) defined population as a collection of individual items whether of people or things that are to be observed in a given problem situation. Similarly, Osuala (2002) refers to population as any group of individuals that have one or more characteristics in common that are of interest of the researcher. Population according to Mugo (2010) is a group of individuals, persons, objects or items from which samples are taken for measurement. Therefore, the target population of the study was limited to faculty members of Department of Library and Information Science in North-eastern States Nigeria. The table below shows the population of the study for both institutions that are teaching Library and Information Science in North-Eastern States Nigeria.

Table 3.1: POPULATION OF THE STUDY

S/NO.	NAMESNUMBER OF FACULTY MEMBERS	
1.	Abubakar Tafawa Balewa University, Bauchi	12
2.	ModibboAdama University of Technology Yola.	17
3.	University of Maiduguri, Borno State.	15
Total		**44**

Source: Record from the HOD of each Department of Library and Information Science studied.

3.4 Sample and Sampling Technique

*Sampling*is the process of selecting a representative group from the population under study. The researcher used census study because data was gathered on every member of the population, so the whole populationwas used for the study. Bernard (2012) also asserted that if a population of a study is less than two hundred (200) the entire population should be used for the study.

3.5 Instruments for Data Collection

Questionnaire was the main and only data collection instrument for this study. According to Afolabi (1993) questionnaires are used by researchers to convert information provided by respondents in a research into research data. Questionnaire is used to measure the attitude and belief of an individual or group of individuals by asking them what they think about some issues (Sambo, 2008). The questionnaire used for this study wasadapted from the digital literacy skills checklist of The Open University of Dundee (2012) Questionnaire.

The questionnaire was divided into (7) sections. The first section is for the personal data of the respondents which was used for identification and classification purposes. The other six sections contained items, which will answered the (6) research questions that were used as guide to the course of the investigation. The choice of this method of data was based on the following reasons.

First the respondents are literate and were capable of completing the questionnaire without any assistance from anybody. Secondly, the respondents spread over a geographical location. Thirdly, the questionnaire methods enjoy prominence in educational research.

According to Omotosho (1994), "questionnaire is the most instruments frequently used in educational research. This is popularly demonstrated by the number of published studies."

3.6 Validity of the Instrument

This is where a draft of instrument presented to the research analyst and supervisors to make necessary observations, corrections, and amendments to strengthen the instrument. According to Muhammad (2005) "the instruments for data collection is valid when it is able to produce correct responses from the subjects of the sample study". In order to ensure that the questionnaire was capable of eliciting the required data and information from the respondents, the instrument was subjected to face validation.

3.7 Reliability of the Instrument

A pilot study was conducted at Bayero University Kano, Kano State. The institution was chosen because of it similarity with the case study and it did not form part of the scope of the study. The aim of the pilot study was to measure the reliability of the instrument to be used, and to explore the likely difficulties to be encountered with the faculty members in the Federal Universities of North-Eastern States of Nigeria. Ten (10) copies of the questionnaire were distributed by the researcher to ten faculty members. The copies of the questionnaire were correctly completed and returned by the respondents because the researcher personally supervised the completion.

The reliability of the instrument was determined using a split half technique; here the internal consistency of scores using scores from a single testing was used. A single test was administered but two scores are obtained for each individual, this means that the test was divided into two halves and sub-scores were obtained for each half. The two sub-scores were then

correlated using Pearson product moment correlation (PPMC) to get the reliability co-efficient of the scale. The general reliability co-efficient of each of the various questions included in the scale was r = 0.97

This was considered adequate for both reliability coefficient and internal consistency of the research instrument. Besides, this result confirmed the reliability of the test since reliability coefficient lies between 0.5 to +1.

3.8 Procedures for Data Collection

The research instrument was administered by the researcher and research assistants to ensure good response rate. The researcher visited two of the institutions studied and the research assistant visited the other one institutions for a period of two weeks and administered the copies of the questionnaires to the faculty members in the three Department of Library and Information Science in the North-Eastern States of Nigeria and another one week was used to collect the completed copies questionnaire from the respondents.

3.9 Procedures for data Analysis

Descriptive and Inferential statistical methods such as percentage for demographical data; mean, standard deviations and t-test of variance for the hypotheses were used on the study. The reason for the choice of t-test allows comparing the means of two variables simultaneously.

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CHAPTER FOUR

DATA PRESENTATION, ANALYSIS AND DISCUSSION

4.1 Introduction

This chapter presents the data collected for this study. Analyses and discussions of the data and findings are presented under the following sub-headings:

4.2 Response Rate of Assessment of Digital Literacy Skills of faculty members in the Department of Library and Information Science in north-eastern states of Nigeria;

4.3 Demographic Variables

4.4 Data Analysis and discussion

4.5 Test of Hypothesis

4.2 Response Rate of Faculty Members

A total of 44 copies of questionnaires were distributed to the respondents, a total of 37 (84%) copies were duly completed and found usable for this study. The response rate was actualized due to the fact that the researcher administered most of the questionnaires herself and few by the research assistants in the respective institutions. The response rate of Assessment of Digital Literacy Skills of Faculty member in the Department of Library and Information Science in the North-Eastern states of Nigeria according to their institution is shown in table 4.1 below

Table 4.1 Response Rate of the Assessment of Digital Literacy Skills of faculty members in the Department of Library and Information Science North-Eastern States

INSTITUTION	**DISTRIBUTED**	**RETURNED**	**%**
Abubakar Tafawa Balewa University Bauchi	12	10	**27.03%**
ModibboAdama University of Technology Yola	17	14	**37.84%**
University of Maiduguri	15	13	**35.13%**
Total	**44**	**37**	**100%**

Table 4.1 above shows that there is variation in the response rate from Institutions. The variations in the response rate are due to the fact that the population size of faculty members from the various institutions under study is not of equal proportion. The table indicates that ModibboAdama University of Technology Yola has more population than the other institutions.

Table 4.2 GENDER DISTRIBUTION TABLE

Gender of the respondents	Name of the	Institutions	
	ATBU	MAUTECH	UNIMAID
Female	3 (30%)	5 (30.7%)	4 (30.4%)
Male	7 (70%)	9 (69.3%)	9 (69.6%)
Total	10 (100%)	14 (100%)	13 (100%)

Table 4.2 shows that the male respondents 70% are above female 30% respondents. These indicate that male respondents are higher than female in each institution. The figure below further shows the gender distribution among the institutions.

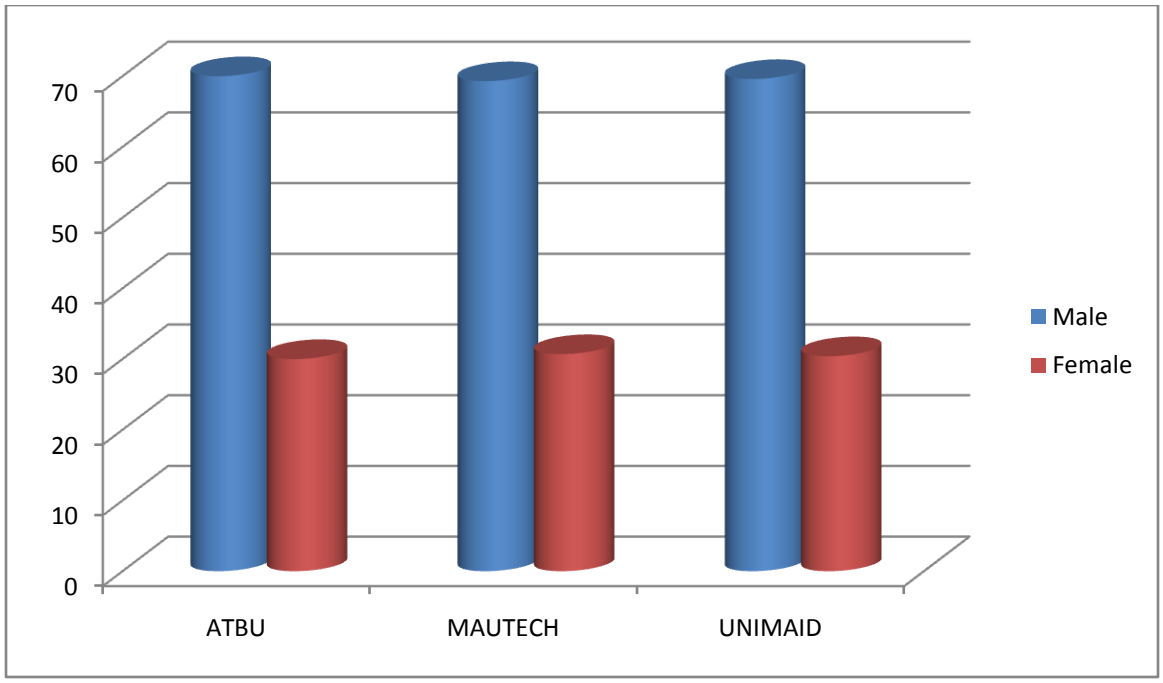


Figure 1: Gender Distribution

Table 4.3

Working Experience

Items	ATBU	MAUTECH	UNIMAID	Percent
1-5 years	5	6	7	18(45%)
6-10 years	3	5	4	12(35%)
over 10 years	2	4	2	8(20%)
Total	10	14	13	100%

Table 4.3 shows thatthosewith working experience a rangeof1-5 years 30(32%) while those with working experience ranging from 6-10 years 17 (8%) and over 10 years 17(18%). The table reveals that the majorities of the respondents are in their youthful age and have more years to serve the institutions.

4.4 Data Analysis and Discussion

This section seeks to analyze and discuss data collected for the study. This is therefore done first through descriptive analysis of using frequency, percentages and Mean. However, in order to understand better the analysis, interpretation and make conclusion on the various findings, the averages of the response scores (that is the mean and standard deviations) has been the maximum mean scores adopted at 3.00 and above for the two categories of the respondents to consider it as being high/significant level of influence; at between 2.00 and 2.49 score to mean minimal/less significant level of influence; and below 2.00 as being insignificant level of influence.

Table 4.4 Ability to locate digital Information

	ATBU			MAUTECH			UNIMAID			TOTAL				
ITEMS	1	2	3	1	2	3	1	2	3	1	2	3	Mean	SD
I know what information I can find on the web	6(60%)	3(30%)	1(10%)	6(42%)	3(21%)	5(37%)	2(16%)	5(38%)	6(46%)	14(39%)	11(29%)	12(32%)	3.2	1.9
I know what information I can find in an online library.	4(40%)	4(40%)	2(20%)	3(21%)	6(42%)	5(37%)	3(23%)	6(47%)	4(30%)	10(27%)	16(44%)	11(29%)	3.5	1.6
I can use advanced search options to limit and refine a search	3(30%)	4(40%)	3(30%)	3(21%)	5(37%)	6(21%)	2(15%)	4(30%)	7(55%)	8(21%)	13(35%)	16(44%)	2.5	1.4
I can use keywords commonly used in my discipline to search for information online.	4(40%)	4(40%)	2(20%)	3(21%)	7(50%)	4(29%)	3(23%)	4(30%)	6(47%)	10(27%)	15(41%)	12(32%)	3.4	1.5
I know when I need to change my search strategy or when my search is complete	3(30%)	6(60%)	1(10%)	3(21%)	5(37%)	6(42%)	2(15%)	5(38%)	6(47%)	8(21%)	16(44%)	13(35%)	3.5	1.9
I can use scanning / skimming techniques to quickly access the key relevant information on a web page.	3(30%)	5(50%)	2(20%)	7(50%)	6(42%)	1(8%)	7(55%)	4(30%)	2(15%)	17(45%)	15(40%)	6(15%)	3.5	2.3

Key: 1 = Very Confident 2 = Quite Confident 3 = Not Confident SD = Standard Deviation

Table 4.4 revealed that I know what information I can find on the web,I know what information I can find in an online library, I can use keywords commonly used in my discipline to search for information online,I know when I need to change my search strategy or when my search is complete and I can use scanning /skimming techniques to quickly access the key relevant information on a web page have average mean scores of over 3.00 for all the faculty members in the North-Eastern states of Nigeria. These can be said to have high significant influence on the respondent's on locating online digital Information because they all recorded above 3.00 mean scores. Whereas, I can use advanced search option to limit and refine a search have average mean scores of over 2.00 for all the faculty members in the three institutions studied. This suggests that such factors have less significant influence on the respondent's on locating of digital Information because they are recorded over 2.00 mean scores.This means that the respondents are have similar factors to locate digital information on the web.

The implications of these findings are that once lecturers can locate information on the web they can easily use it for their teaching and research as Joseph (2010) explains that "an online, searchable, web-accessible database containing intellectual works by scholars and researchers organized to increase how to locate scholars' information and ensure the long term preservation".

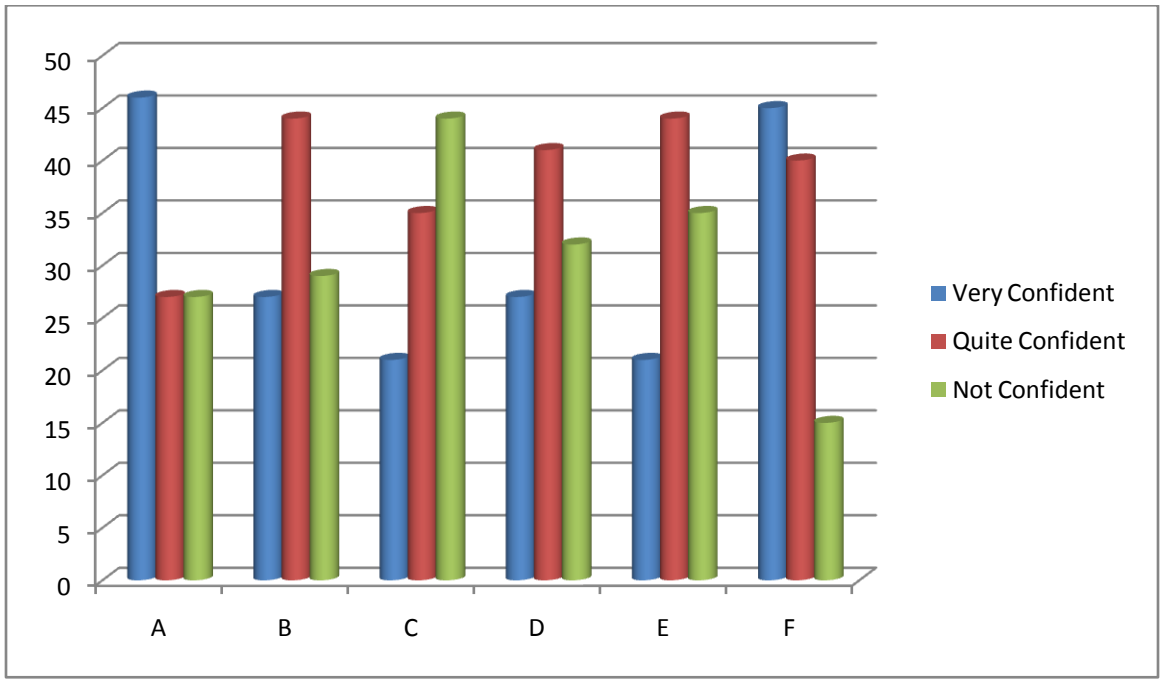


Figure 2: Ability to locate digital Information

4. 5 Critically judge and evaluate credible digital information

	ATBU			MAUTECH			UNIMAID			TOTAL				
ITEMS	1	2	3	1	2	3	1	2	3	1	2	3	Mean	SD
I can identify the depth of the information provided on the site	1(10%)	3(30%)	6(60%)	3(21%)	6(42%)	5(37%)	2(16%)	5(38%)	6(46%)	6(16%)	14(38%)	17(46%)	3.5	1.9
I can assess whether an online resource (e.g. web page, blog, wiki, video, podcast, academic journal article) or person is credible and trustworthy.	4(40%)	4(40%)	2(20%)	3(21%)	6(42%)	5(37%)	3(21%)	3(23%)	7(55%)	10(27%)	13(35%)	14(38%)	3.2	1.6
I can identify the purpose of the site and whether the information provided are facts of opinions	3(30%)	4(40%)	3(30%)	3(21%)	5(37%)	6(21%)	4(30%)	4(30%)	5(38%)	10(27%)	12(32%)	15(41%)	3.4	1.8
I can identify whether the information is up-to-date or not	2(20%)	4(40%)	2(20%)	4(29%)	7(50%)	4(29%)	3(23%)	6(46%)	6(46%)	8(22%)	17(46%)	12(32%)	2.5	1.1

Key: 1 = Very Confident 2 = Quite Confident 3 = Not Confident SD = Standard Deviation

It was evidence from table 4.5 that I can identify the depth of the information provided on the site, I can access whether an online resources (e.g web page, blog, wiki, video, podcast and online journal article) or person is credible and trustworthy, I can identify the purpose of the site and whether the Information provided are fact of opinions have average mean scores of over 3.00 for all the faculty members in the three institutions studied. This showed that they have high significant influence on the respondent's on critically judge and evaluate credible digital Information source because they all recorded above 3.00 mean scores. On the other hand, responses on I can identify whether the Information is up to-date or not have less significant influence on the respondent's web information searching and retrieval because they all recorded above 2.00 mean scores.

The Implication of this finding is that faculty members in the three Universities critically judge and evaluate credible digital information sources are alike this go in line with Miriam, Metzger, Andrew &Flanagin, (2013), understood that the credibility of a source or message is a receiver-based judgment which involves both objective judgments of information quality or accuracy as well as subjective perceptions of the sources' trustworthiness, expertise, and attractiveness.

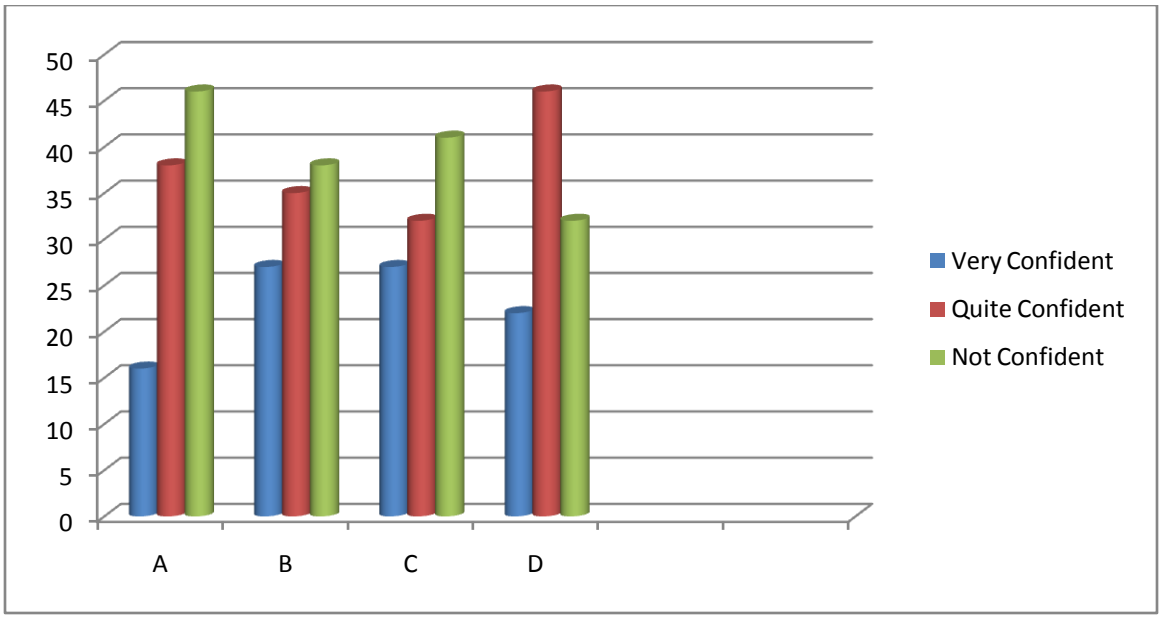


Figure 3: Critically judge and evaluate credible digital Information

4.6 Creating Digital Content by the faculty members

	ATBU			MAUTECH			UNIMAID			TOTAL				
STATEMENT	1	2	3	1	2	3	1	2	3	1	2	3	Mean	SD
I can create content in different media for people to read online.	2(20%)	5(50%)	3(30%)	2(15%)	6(42%)	6(42%)	3(23%)	7(55%)	3(23%)	7(19%)	18(49%)	12(32%)	3.5	1.9
I can add comments to blogs, forums or web pages, observing 'netiquette' and appropriate social conventions for online communications.	4(40%)	4(40%)	2(20%)	3(21%)	6(42%)	5(37%)	3(23%)	6(47%)	4(30%)	10(27%)	16(44%)	11(29%)	2.4	1.4
I know how to 'tag' information I create online to allow others to retrieve it quickly	1(10%)	6(60%)	3(30%)	2(15%)	6(42%)	6(21%)	2(15%)	7(55%)	4(30%)	5(14%)	19(51%)	13(35%)	3.7	2.2
I can use other people's work (found online) without plagiarizing.	4(40%)	4(40%)	2(20%)	3(21%)	4(29%)	7(50%)	2(15%)	5(38%)	6(47%)	9(24%)	13(35%)	15(41%)	2.6	1.7
I can cite a reference to an online resource (e.g. in an assignment) using the correct format	4(40%)	4(40%)	2(20%)	3(21%)	7(50%)	4(29%)	2(15%)	6(47%)	5(38%)	9(24%)	15(41%)	13(35%)	2.6	1.7

Key: 1 = Very Confident 2 = Quite Confident 3 = Not Confident

Table 4.6 indicated that I can create content in different media for people to read online.and I know how to 'tag' information I create online to allow others to retrieve it quickly have average mean scores of over 3.00 for all the faculty members in the North-Eastern states of Nigeria. Whereas, respondents that indicated that I can add comments to blogs, forums or web pages, observing 'netiquette' and appropriate social conventions for online communications, I can use other people's work (found online) without plagiarizing and I can cite a reference to an online resource (e.g. in an assignment) using the correct format have average mean scores of over 2.00 for all the faculty members in the three institutions studied. This suggests they have less significant influence on the respondent's on creating digital content because they are recorded over 2.00 mean scores.

The implication of this finding indicates that they cannot create digital content in their teaching and research as Ritella&Hakkarainen, (2012) who confirmed that the use of digital content transformed the learning experience for the students by increasing students' interest in the subject matter.

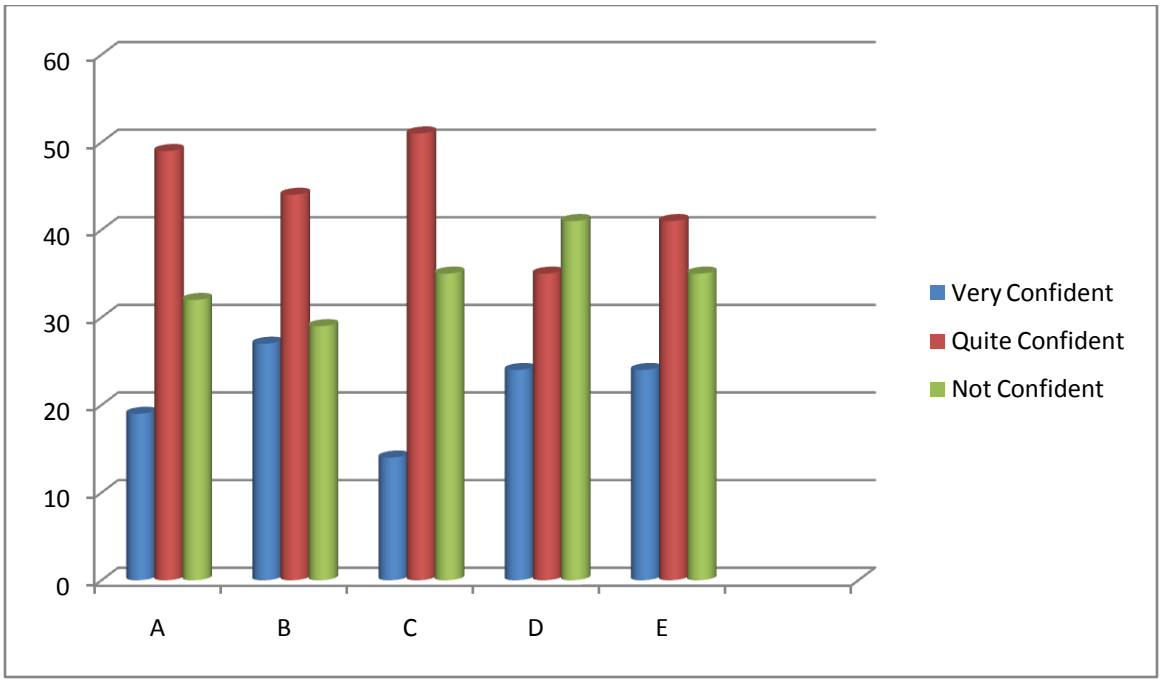


Figure 4; creating digital content

4.7 Communicate using digital Content

	ATBU			MAUTECH			UNIMAID			TOTAL				
STATEMENT	1	2	3	1	2	3	1	2	3	1	2	3	Mean	SD
I can communicate safely with others online to create a shared document or presentation	4(40%)	3(30%)	3(30%)	3(21%)	6(42%)	5(37%)	2(16%)	5(38%)	6(46%)	9(24%)	14(38%)	14(38%)	2.3	1.5
I can use media-capture devices to record and edit a podcast or video	2(20%)	4(40%)	4(40%)	2(14%)	7(50%)	5(37%)	2(16%)	6(47%)	5(38%)	6(16%)	17(46%)	14(38%)	3.4	1.8
I can interact with others online (forums, blogs, social networking sites, audio, video, etc.)	3(30%)	4(40%)	3(30%)	3(21%)	6(42%)	5(37%)	4(30%)	6(47%)	3(23%)	10(27%)	16(44%)	11(29%)	2.2	1.3
I can create content online for different audiences using the appropriate style or tone, e.g. a web page or blog entry for private use, a presentation for use by my fellow students, an assessment for my course or a webpage to be read by the general public	2(20%)	4(40%)	4(40%)	1(7%)	6(42%)	7(50%)	2(16%)	4(30%)	7(55%)	5(14%)	14(38%)	18(48%)	3.7	2.2
I can use social bookmarking to organize and share information	3(30%)	3(30%)	4(40%)	3(21%)	5(37%)	6(42%)	3(23%)	4(30%)	6(47%)	9(24%)	12(32%)	16(44%)	2.2	1.3
I can share files legally with others	3(30%)	5(50%)	2(20%)	2(14%)	6(43%)	6(43%)	1(8%)	3(23%)	9(69%)	6(16%)	14(38%)	17(46%)	3.5	1.9

Key: 1 = Very Confident 2 = Quite Confident 3 = Not Confident SD = Standard Deviation

Table 4.7 Revealed that I can create content online for different audiences using the appropriate style or tone, e.g. a web page or blog entry for private use, a presentation for use by my fellow students, an assessment for my course or a webpage to be read by the general public and I can share files legally with others have average mean scores of over 3.00 for all the faculty members in the North-Eastern states of Nigeria. These can be said to have high significant influence on the respondent's on communicating using digital content because they all recorded above 3.00 mean scores. Whereas, I can communicate safely with others online to create a shared document or presentation, I can interact with others online (forums, blogs, social networking sites, audio, video, etc.) and I can use social bookmarking to organize and share information have average mean scores of over 2.00 for all the faculty members in the three institutions studied. This suggests that such factors have less significant influence on the respondent's on locating of digital Information because they are recorded over 2.00 mean scores.

The implication of this finding is that lecturers can interact with their students online.(Hakkarainen, Paavola, Kangas, &Seitamaa-Hakkarainen, 2013), revealed that students who were supported by proper instruction and collaborative technologies were able to pursue challenging inquiries in their studies. Furthermore, investigations of supportive technology-enhanced learning provided clear evidence that technology-enhanced process of Investigative Learning or Inquiry-Based Science teaching or Learning by Collaborative Designing do in fact it feed up students' learning engagement at various levels of education because of digital technology.

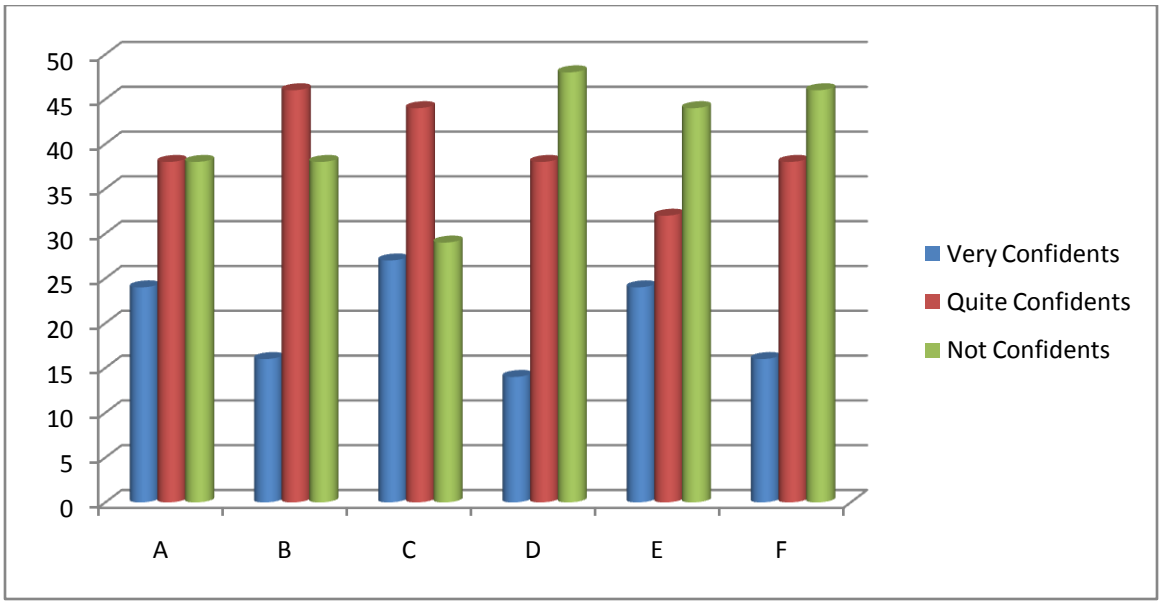


Figure 5: Communicate using digital content

4.8 Integrate digital content in teaching and learning

	ATBU			MAUTECH			UNIMAID			TOTAL				
STATEMENT	1	2	3	1	2	3	1	2	3	1	2	3	Mean	SD
I can use technology like computer, ipads in teaching student.	2(20%)	5(50%)	3(30%)	1(7%)	4(29%)	9(64%)	2(15%)	5(38%)	6(47%)	5(14%)	14(38%)	18(48%)	3.9	2.5
I can integrate digital storytelling power point in classroom.	1(10%)	5(50%)	4(40%)	2(14%)	7(50%)	5(37%)	1(8%)	5(38%)	7(47%)	4(10%)	17(46%)	16(44%)	3.8	2.3
I can use electronic storybook to increase reading motivation.	1(10%)	6(60%)	3(30%)	2(14%)	7(50%)	5(37%)	2(15%)	7(55%)	4(30%)	5(14%)	20(58%)	12(32%)	3.8	2.3
I can use social media like skype with my students in answering their questions.	3(30%)	6(60%)	1(10%)	3(21%)	7(50%)	4(29%)	2(15%)	6(47%)	5(38%)	7(19%)	19(52%)	11(29%)	3.6	2.0

Key: 1 = Very Confident 2 = Quite Confident 3 = Not Confident SD = Standard Deviation

Table 4.8 indicated that respondent can I can use technology like computer, ipads in teaching student, I can integrate digital storytelling power point in classroom, I can use electronic storybook to increase reading motivation and I can use social media like skype with my students in answering their questions. This indicates that faculty members in north-eastern states of Nigeria can integrate digital content in their classroom.

The implication of this study indicate that lecturers can integrate digital content in their teaching as Higgins (2009) confirms that the level of skill, confidence, and knowledge learners have when using digital technologies will impact on the quality of their use of the technology. While most learners' express very positive attitudes towards technologies for learning and are confident users.

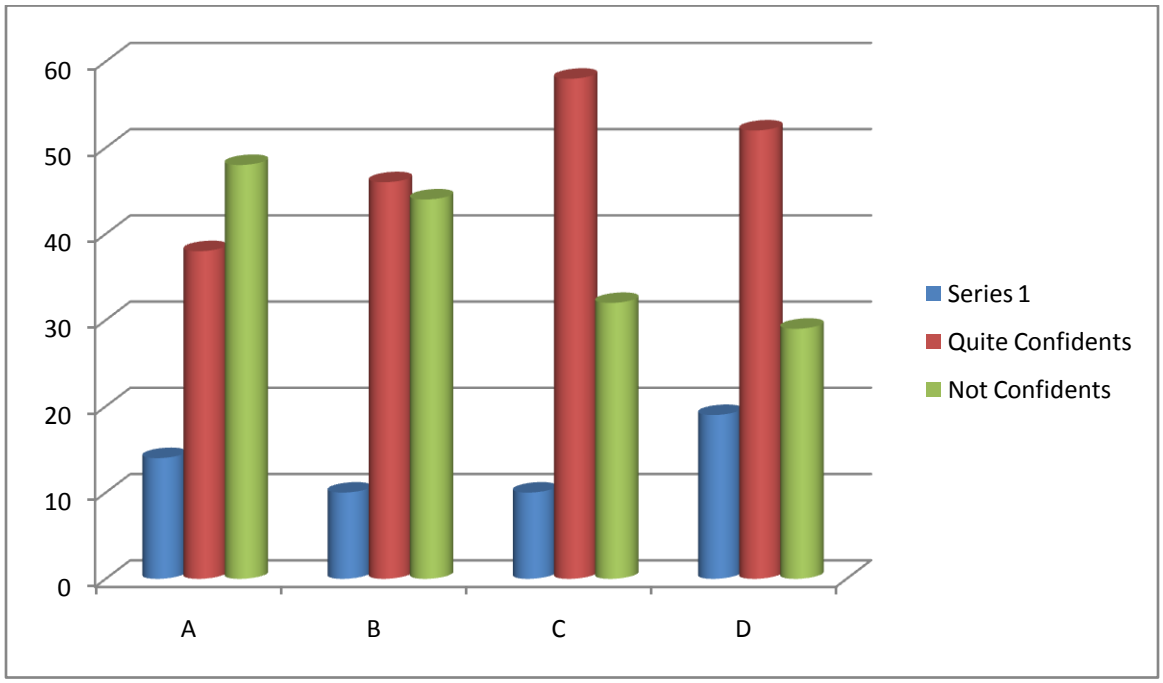


Figure 6: Integrate digital content in teaching

4.9 Challenges encountered in using digital technology

	ATBU			MAUTECH			UNIMAID			TOTAL				
STATEMENT	1	2	3	1	2	3	1	2	3	1	2	3	Mean	SD
Lack of access to the infrastructure always	5(50%)	3(30%)	2(20%)	6(42%)	4(29%)	4(29%)	7(54%)	5(38%)	1(8%)	18 (48%)	12(32%)	7(19%)	3.5	1.9
Lack of adequate ongoing professional development.	6(60%)	2(20%)	2(20%)	6(42%)	5(37%)	3(21%)	6(47%)	4(30%)	3(23%)	18(48%)	11(29%)	8(20%)	2.6	1.7
Personal characteristics such as: age, level, etc	5(50%)	3(30%)	2(20%)	7(50%)	6(42%)	1(7%)	5(38%)	6(47%)	2(15%)	17(46%)	15(40%)	5(14%)	3.6	2.1
Lack of technical assistance	4(40%)	3(30%)	3(30%)	6(42%)	7(50%)	1(7%)	7(54%)	4(30%)	2(15%)	17(46%)	14(38%)	6(16%)	3.6	2.1

Key: 1 = Very Confident 2 = Quite Confident 3 = Not Confident SD = Standard Deviation

Table 4.9 indicated that 48% of the respondents were very sure that lack of access to the infrastructure always, Lack of adequate ongoing professional development., Personal characteristics such as: age, level, et and Lack of technical assistance have the average of 3.00 for all the faculty members in the North-Eastern states of Nigeria. These can be said to have high significant influence on the respondent's on challenges encountered using digital technology.

The implication of this study is that these are the factors hindering the use of digital technology it goes in line with Plomp, Anderson, Law, & Quale, (2009), confirmed that effective adoption and integration of digital technology into teaching in schools depend mainly on the availability and accessibility of digital technology such as hardware, software, etc. Obviously, if lectures cannot access digital resources, then they cannot use it. Therefore, access to computers, updated software and hardware are key elements to successful adoption and integration of technology.

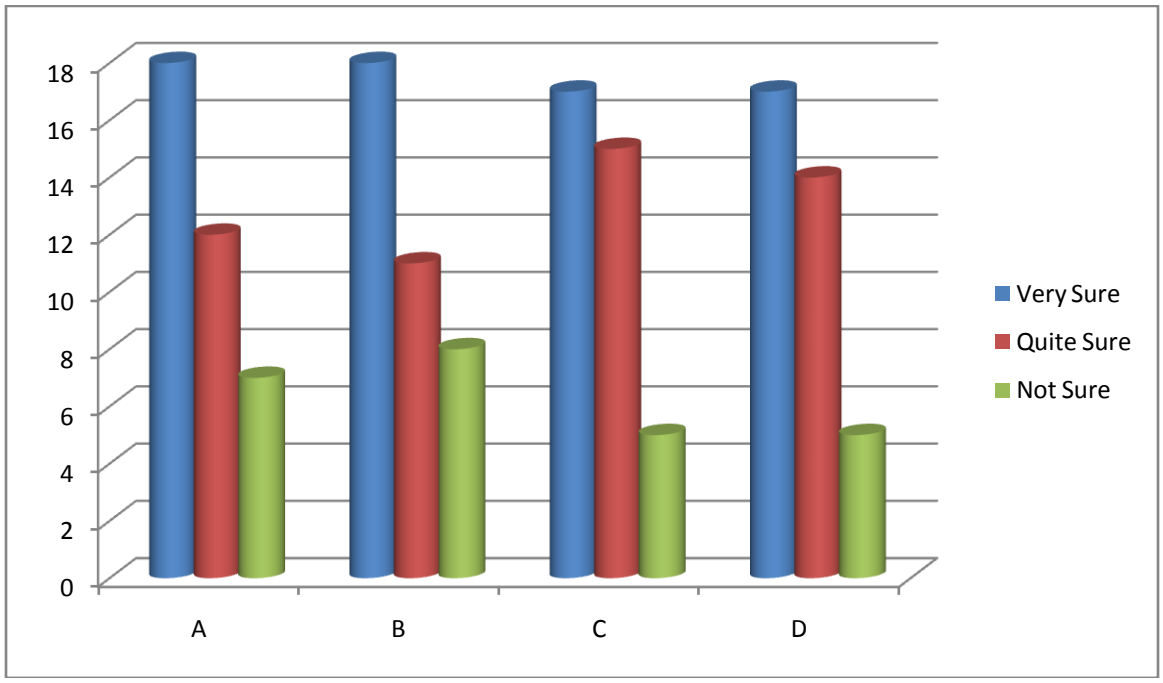


Figure: 7 Challenges Encountered in Using Digital Technology

4.5 Test of Hypothesis

The hypothesis is stated below:

HYPOTHESIS Ho: There is no significant difference between Digital Literacy Skills and teaching of library and information science in federal Universities of North-Eastern States of Nigeria.

The above hypothesis was tested using t-test to determine the difference.

Table 4.5 Analysis of difference between digital literacy skills and teaching of library and information science in the federal universities in the north-eastern states

Variable	**Sum of Squares**	**df**	**Mean Square**	**T-Cal**	**P-Value**
Locate	1.405	2	.703	.010	.991
Evaluate	23508.433	318	73.926		

Table 4.5 shows that the F value is .010 and p value is .991 which is greater than alpha=0.05. Hence, the null hypothesis is retained. This implies that there is no significant difference between Digital Literacy Skills and teaching of library and information science in federal Universities of North-Eastern States of Nigeria.

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CHAPTER FIVE

SUMMARY, CONCLUSION AND RECOMMENDATIONS

5.1 Introduction

This chapter provides the summary of the study, summary of majorfindings, conclusion and recommendations for the study.

5.2 Summary of the Study

This study focused on the assessment of Digital Literacy Skills of faculty members in the Department of Library and Information Science in the federal Universities of North-Eastern States of Nigeria. In order to carry out this study, six (6) research questions and one (1) hypothesis was formulated. The research questions sought to find out the ability to locate digital Information; critically judge and evaluate credible digital information source; the level of digital literacy skills to create digital content among other research questions. The research method adopted was survey. The population; of this study comprised allthe faculty members of three Federal Universities in the Department of Library and Information Science of North-Eastern States of Nigeria. The total number was forty-four (44). The data related to the research questions were analyzed using descriptive and inferential statistical method, mean and one-way ANOVA for the test of hypothesis.

5.3 Summary of MajorFindings

Based on the data analysis, presentations and discussions, the summary of major findings of the study include;

1. Faculty members in the Department of Library and Information Science in the Federal Universities of North-eastern states of Nigeria do not have the ability to locate digital Information.
2. Faculty members in the Department of Library and Information Science in the Federal Universities of North-eastern states of Nigeria do not have the ability to critically judge and evaluate credible digital Information.
3. Faculty members in the Department of Library and Information Science in the Federal Universities of North-eastern states of Nigeria do not have the ability to create digital content in teaching.
4. Faculty members in the Department of Library and Information Science in the Federal Universities of North-eastern states of Nigeria do not have the ability to communicate using digital technology in teaching.
5. Faculty members in the Department of Library and Information Science in the Federal Universities of North-eastern states of Nigeria have the ability to integrate digital content in their teaching.
6. Faculty members in the Department of Library and Information Science in the Federal Universities of North-eastern states of Nigeria were sure that lack of access to the infrastructure always are the challenges encountered in using digital technology.

The result of the hypothesis tested showed that:

7. There is no significant difference between Digital Literacy Skills and teaching of library and information science in federal Universities of North-Eastern States of Nigeria.

5.4Contribution to Knowledge

1. The study established that Faculty Members in the Department of Library and Information Science North-Eastern states of Nigeria were able to use social bookmarking to organize and share information.

2. It also established that Faculty Members in the Department of Library and Information Science North-Eastern states of Nigeria could use keywords commonly used in their displines to search for information online.

5.5 Conclusion

Based on the findings of the study, the researcher concluded that faculty members in the Department of Library and Information Science North-eastern States of Nigeria have average level of skills in accessing digital information generally. However, Digital literacy skills are essential for information professionals. Faculty members have a lot to offer their students through ICT in the current dispensation. Therefore, it is very important to have adequate skills in the use of these technologies. Many past reports assign low digital literacy of faculty members in Nigeria. The present research portrays a little bit increase of level of digital literacy skills of faculty members in the study. The increased skills recorded in the present research could be as a result of increased awareness and diffusion of ICT in many areas as witnessed in the last few years. Although the findings of this research indicate an improvement of digital literacy levels over previous studies, some percentages of faculty members still rated themselves as deficient in vital areas of digital literacy skills. The target should be that every faculty member in Nigeria should be equipped with all the necessary skills to enable them

function effectively in the present age. This is highly expected considering that ICT is the current tool for information delivery and faculty members can only harness these tools by equipping themselves with the necessary skills and competencies.

5.6 Recommendations

Based on the findings of the research study, the following recommendations are suggested by the researcher:

1. The department of Library and Information Science in the North-Eastern States of Nigeriashould ensure or organize digital literacy skills that will focus on the use of advance search in search engines. In addition Faculty members should also be taught how to recognize when to change search strategy or when their search is completed.
2. The faculty members in the Department of Library and Information science in the North-Eastern States of Nigeria should be taught on how to identify the depth or comprehensiveness and purpose of digital information resources.
3. Faculty members in theDepartment of Library and Information science in the North-Eastern States of Nigeriashould be trained on how to cite online information resources to help them avoid being accused of plagiarism.
4. Faculty members in theDepartment of Library and Information science in North-Eastern State of Nigeriashould be provided with more training like workshops, conferences and seminarson how to create content online for different audience.
5. The Department of Library and Information science in the North-Eastern States of Nigeriashould provide digital technologies such as teleconferencing for the faculty members to integrate it in their teaching process.

6. Emphasis should be given to digital technology components by the institutions so as to equip the faculty members in the Department of Library and Information science in the North-Eastern States of Nigeriawith the requisite expertise to fully harness the potentials of Information and Communication Technology in teaching learning and research. Also, there is urgent need for the increase in the budgetary allocation to the universities by the government in order to raise their ICT affordability status.

5.7 Limitation of the Study

The study is limited was the inability by the researcher to retrieve the administered questionnaire as scheduled.

5.8Suggestions for Further Study

1. Use of digital technology for educational purpose among undergraduate of North-Eastern states of Nigeria.
2. Knowledge sharing among post-graduate students to communicate and collaborate using digital Technology in Abubakar Tafawa Balewa University Bauchi.

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APPENDIX A

Department of library and inforSci,

Faculty of Education,

Ahmadu Bello University, Zaria.

Dear Respondent,

The questionnaire is aimed at collecting data on 'Assessment of digital literacy skills of faculty members teaching Library and Information Science in Federal University in North-Eastern States of Nigeria'. Kindly respond to the questions to enable me successfully complete the study. All information provided would be used for educational purpose only and anonymity of the respondents would be guaranted.

Suleiman Maryam Sabo

Research student

The questionnaire is divided in to Seven Sections; section 1 is for the demographic information and the rest of the sections are aim at answering the research questions.

1. Demographic information
2. Ability to locate digital information
3. Critically judge and evaluate credible digital information
4. Create digital contents
5. Communicate and collaborate using digital technology
6. To integrate digital content in teaching and learning
7. Challenges encounter in using digital technology

Section 1: Demographic information
Rank:
Age:
Gender:

Section 2: Ability to locate digital information

SKILLS	Very Confident	Quite Confident	Not Confident
I know what kind of information I can locate on the web			
I know what kind of information I can locate in online library			
I can use advanced search option to limit and refine a search			
I can use the keywords commonly used in my displines to search for information online			
I know when I need to change my search strategy or my search is complete			
I can use scanning / skimming techniques to quickly access the key relevant information on a web page.			

Section 3: Critically judge and evaluate credible digital information

SKILLS	Very Confident	Quite Confident	Not Confident
I can use information in different media, for example, podcasts or videos.			
I can assess whether an online resource (e.g. web page, blog, wiki, video, podcast, academic journal article) or person is credible and trustworthy.			
I can keep a digital record of the relevant information I find online using standard desktop tools.			
I know how to use social networks to find information to support my studies.			

Section 4: Create digital content

SKILLS	Very Confident	Quite Confident	Not Confident
I can create content in different media for people to read online.			
I can add comments to blogs, forums or web pages, observing 'netiquette' and appropriate social conventions for online communications.			
I know how to 'tag' information I create online to allow others to retrieve it quickly.			
I can use other people's work (found online) without committing plagiarism.			
I can cite a reference to an online resource (e.g. in an assignment) using the correct format.			

Section 5: Communicateusing digital content

SKILLS	Very Confident	Quite Confident	Not Confident
I can collaborate safely with others online to create a shared document or presentation			
I can use media-capture devices to record and edit a podcast or video			
I can interact with others online (forums, blogs, social networking sites, audio, video, etc.)			
I can create content online for different audiences using the appropriate style or tone, e.g. a web page or blog entry for private use, a presentation for use by my fellow students, an assessment for my course or a webpage to be read by the general public			
I can use social bookmarking to organise and share information			
I can share files legally with others			

Section 6: Integrate digital content in teaching and learning

SKILLS	Very Confident	Quite Confident	Not Confident
I can use technology like computer, ipads in teaching student			
I can integrate digital storytelling power point in classroom			
I can use electronic storybook to increase reading motivation			
I can use social media like skype with my students in answering their questions			

Section 7: Challenges encounter in using digital technology

SKILLS	Very sure	Quite sure	Not Sure
Lack of access to the infrastructure always			
Lack of adequate outgoing professional development			
Personal characteristics such as: age, level, etc			
Lack of technical assistance			
Others please specify			

APPENDIX B

Using Split half method the data for the pilot study were as follows:

Odd number Questions(X)	Even number Questions (Y)
9	8
4	4
6	5
5	5

Using Product Moment Correlation Coefficient (PPMr), the computation of the data for the pilot study is as follows:

The fomular for PPMr is

$$PPmr = \frac{\sum(X - \bar{X})(Y - \bar{Y})}{\sqrt{\sum(X - \bar{X})^2 \sum(Y - \bar{Y})^2}}$$

Where

$\sum$ = Summation

X = Odd number questions from the questionnaire

$\bar{X}$ = Mean of the odd number questions

Y = Even number questions from the questionnaire

$\bar{Y} =$ Mean of the even number questions

Computing each variable in the formular into a table gives us:

X	**Y**	$(\boldsymbol{X} - \bar{\boldsymbol{X}})$	$(\boldsymbol{Y} - \bar{\boldsymbol{Y}})$	$(\boldsymbol{X} - \bar{\boldsymbol{X}})^2$	$(\boldsymbol{Y} - \bar{\boldsymbol{Y}})^2$	$(\boldsymbol{X} - \bar{\boldsymbol{X}})(\boldsymbol{Y} - \bar{\boldsymbol{Y}})$
9	8	3	2.5	9	6.25	7.5
4	4	-2	-1.5	4	2.25	3
6	5	0	-0.5	0	0.25	0
5	5	-1	-0.5	1	0.25	0.5
Total				**14**	**9**	**11**

$$\bar{X} = \frac{\sum X}{N} = \frac{9 + 4 + 6 + 5}{4} = \frac{24}{4} = 6$$

$$\bar{Y} = \frac{\sum Y}{N} = \frac{8 + 4 + 5 + 5}{4} = \frac{22}{4} = 5.5$$

Substituting the values in the table above into the PPMr equation, we have:

$$PPMr = \frac{11}{\sqrt{(14)(9)}} = \frac{11}{\sqrt{126}} = \frac{11}{11.22} = 0.97$$

PPMr = 0.97