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TOPIC:

AN ASSESSMENT OF INFORMATION LITERACY SKILLS AMONG FOURTH YEAR LIBRARY AND INFORMATION SCIENCE STUDENTS AT THE UNIVERSITY OF ZAMBIA

DECLARATION

Hereby, Nyimba Isaac, Sempanya Wise, Mbolela Chishimba, Chama Michelle and Mafuleka Nathan, declare that this report is a result of our own information obtained from the field research at the University of Zambia among fourth year library and information science students. Therefore, any other students pursuing a degree at the University of Zambia or any other University have by no means presented it. All the published work or materials from other sources that have been integrated have been precisely acknowledged and referenced therein.

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LIST OF ABBREVIATIONS

ICT's _____ Information Communication Technologies

ILS_____ Information Literacy Skills

LIS _____ Library and Information Science

OPAC _____Online Public Access Catalogue

SPSS_____ Statistical Package for Social Sciences

UNESCO _____United Nation Educational, Scientific and Cultural Organisation

UNZA_____ The University of Zambia

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ABSTRACT

In every institution, organization and the world at large, information is vital for decision making, reduction of uncertainty and question answering. Therefore, it is cardinal that an individual possesses information literacy skills that will enable him or her to recognize when information is needed and have the ability to locate, evaluate, and use the needed information effectively as indispensable skills for the 21st Century and beyond. Therefore, this study was designed to assess information literacy skills among fourth year Library and Information Science students at the University of Zambia. Areas of focus of the study were to determine the level of knowledge on information literacy skills among fourth year Library and Information Science students, as well as to identify the commonly used information search strategies and finally to identify the student's areas of strength and weakness in information literacy skills. Data was collected from 80 conveniently sampled or selected fourth year library and information science students for the 2018/2019 academic year using self-administered questionnaires. Out of the 80 questionnaires distributed, 73 questionnaires were returned giving a response rate of 91%. The results showed that most of the fourth-year library and information science students at the University of Zambia had an idea of what information literacy is about. However, upon examination of the students by giving them questions, it was observed that the majority had poor information literacy skills. On the search strategies the respondents indicated that they were most familiar with open-ended searching and over half of the students were also able to check for the accuracy of information they retrieved. Most of the respondents had problems in organising information, a few said that they had problems in presentation and identifying when information was needed. Therefore, the study concluded that presentation and identification of information were the respondent's possible areas of strength because only a few acknowledged having challenges in these skills. Finally, the study recommended that the library and information science faculty should re-introduce LIS9045, a purely information literacy course as a compulsory course from second year to fourth in order to advance students information literacy skills.

Keywords: Information, Information Literacy, Information literacy skills, Library and information science

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CHAPTER ONE: INTRODUCTION

1.1 Overview

This chapter presented an introduction to the study. It is in this chapter that a background to information literacy skills, statement of the problem, research objectives and questions, significance of the study, limitations of the study and ethical considerations are presented. Operational definitions conclude the chapter. The relevance of this chapter is that it set parameters of the study by specifying the topic, objectives and scope of the study. A brief background about information literacy skills and definition of terms aim to increase understanding of the topic.

1.2 Background of the study

In every institution, organization and the world at large, information is vital for decision making, reduction of uncertainty and question answering (Kaniki, 1991). Therefore, it is cardinal that an individual possesses Information literacy skills that will enable him/her to recognize when information is needed and have the ability to locate, evaluate, and use the needed information effectively as indispensable skills for the 21st Century and beyond (Kaniki, 1991). Information literacy is known by different terms because of the different kinds of problems that individuals or groups are trying to solve. Some of these terms include information competency, information management, information skills, inquiry-based learning, knowledge management, problem-based learning and resource-based learning (Courtright Memorial Library, 2019).

Information literacy plays an important role in the lives of people especially with regards to social development. It brings awareness and insight of the importance of the people to use national facilities or social services such as education and health. For example, people who are information literate have the ability to understand the importance of education and the necessity to go to school and take their children to school. This is vital for national development because development should start at individual level before it matures to national level. Information literacy has a tendency to lead to education and results in empowering the citizens or the people with the skills and knowledge in order to be functionally productive in the society (Becker, 1964).

An economy is enhanced when learners possess information literacy skills. Effective information literacy skills open doors to educational and employment opportunities so that people are able to pull themselves out of poverty and chronic underdevelopment. In our

increasingly complex and radically changing technological era, it is essential that individuals continuously expand their knowledge and learn new skills in order to keep up with the pace of change (Project Literacy, 2019).

In the cycles of health, people with adequate information literacy skills maintain better health through the ability to understand and interpret health information. They are better able to communicate clearly with their medical care givers, learn and adopt preventative health practices and detect problems so that they can be treated earlier or make appropriate choices amongst health care options (Project Literacy, 2019).

In education, information literacy is an approach to building knowledge, solving problems and communicating information and ideas that empowers people to be lifelong learners who are equipped with analytic and critical thinking that are beyond the scope of their formal schooling (Stern, 2002). Information literacy skills are required not only to gain access to the available information resources, but also analyse from large quantities of information and utilize the most appropriate information resources. Further, the research skills of students are improved because they can retrieve information and interpret it using a variety of media and output formats. Furthermore, when students possess adequate information literacy skills, their confidence and ability to work independently is improved since they can think critically, interpret information and make informed judgments (Kilmer and Koppel, 2002).

Consequently, it is paramount for universities to ensure that all students acquire information literacy skills by integrating information literacy instruction into their curriculum. For all societies, information literacy is becoming an increasingly important component of not only literacy policies and strategies, but also of global policies to promote human development (Parker, 2005).

In the case of Library and Information Science students, their state of awareness on information literacy ought to be even more important, as skills and capabilities within information literacy are key requirements for their future professional practice. Library and Information Science (LIS) professionals have a specific function in ensuring that people become information literate. Being information literate is a necessity for information professionals because it helps them maintain a lifelong learning attitude that keeps them up-to-date in an ever-changing information environment, while at the same time it enables them to develop as facilitators of learning. Information professionals facilitate access to information and help people to satisfy their information needs. Hence, people become better independent information users. In order

to achieve this, information professionals too have to learn to do this effectively. Its therefore essential for LIS students to be aware of information literacy as a concept, to become information literate themselves and to learn about some key aspects of teaching information literacy. LIS students need to understand themselves as information literate people, and understand information literacy holistically, before they can start teaching someone else about it (Virkus et al., 2005).

The University of Zambia (UNZA) is the oldest and the largest university in Zambia. An Act of Parliament No. 66 of 1965 established it, and its first intake of students took place on 17th of March 1966. The University is currently comprised of the following schools: Agriculture Sciences, Education, Engineering, Humanities and Social Sciences, Law, Medicine, Mines, Natural Sciences, Graduate School of Business Studies and Veterinary Medicine. The mission of the University of Zambia is Service and Excellence. This has guided the development of the University since its inception to be responsive to the real needs of the country and it is an institution, which merits respect and recognition throughout the academic world. The key objectives of the university are to teach, undertake appropriate research and to render services to the public. Its activities include giving instructions, research and extension programs.

Furthermore, at the heart of the University of Zambia are three different libraries located in different locations, namely, UNZA Main Library, School of Veterinary Medicine Library and the School of Medicine Library.

The University strives to merit respect of the academic world both through the intrinsic excellence of its courses and through the evident quality and subsequent performance of its graduates, the university has over 150 degree and postgraduate programs. Among the programs offered is Library and Information Science, which promotes Information Literacy across different sectors such as health, education and other aspects of life (University of Zambia, 2018).

The Department of Library and Information Science is one of the old departments in the School of Education. It was established in 1967, one year after the inauguration of the University of Zambia in 1966.The Department began as part of the United Nations Educational Scientific and Cultural Organisation (UNESCO) project to help the independent Zambia to train Librarians, Archivists, Records Managers, Information Workers and Documentarists. Under this project, Library and Information Studies was taken as a minor by students pursuing Bachelor of Arts at the University of Zambia. The Department produced its first three graduates

in 1970. Today, the department has numerous students pursuing Library and Information Science at both graduate and under-graduate levels. Being students of library and information science, it is expected that these students should be information literate or at least better suited to possess information literacy skills (University of Zambia, 2018).

1.3 Statement of the problem

The world today has experienced growth in terms of information generation due to the advancements in technology. There are so many platforms that provide information such as the Internet and other Information and Communications Technologies (ICTs) that present information in various formats (Porter and Miller, 1985). Due to this fast information development, the problem of information explosion has risen. Students are always in need of information in order for them to do assignments, write exams, conduct research and many other academic activities. The Department of Library and Information Science has a component of information literacy in its introductory course, LIS1010, which is taught to every first year LIS students. Besides, LIS1010, the department also has an elective course LIS9045 which is purely an information literacy course taught at third and fourth year. However, students don't usually register for the course hence it is rarely taught. The department has also partnered with the University Main Library to provide information literacy skills to all students especially first years. Therefore, the knowledge and skills acquired through their training should help them obtain, process and evaluate information in general to solve individual and societal problems. However, it is not clear the extent to which students are adequately taught information literacy and as to whether they are information literate at the point of graduation. If the student does not possess adequate information literacy skills, he/she will not be able to identity, search, recognise, evaluate and use information effectively hence, this will result in poor decision making. LIS students are better expected to seek, access, evaluate and utilize information literacy skills to solve their different information problems because of the nature of the LIS program. Therefore, this research sought to assess fourth year LIS students Information Literacy Skills (ILS).

1.4 Research Objectives

The general objective of the study was to assess Information Literacy Skills of fourth year LIS students at UNZA. The study sought to achieve the following specific objectives:

1. To determine the level of knowledge on information literacy skills among fourth year LIS students.

2. To identify the commonly used information search strategies among fourth year LIS students.

3. To identify areas of strengths and weaknesses in information literacy skills among fourth year LIS students.

1.5 Research Questions

The study was guided by the following research questions:

1. How much information literacy skills do fourth year LIS students possess?

2. What are the commonly used information search strategies among fourth year LIS students?

3. What are the areas of strengths and weaknesses in information literacy skills among fourth year LIS students?

1.6 Significance of the study

In a world where there is massive competition and need for growth, information is one of the most important resource that any organisation or country can have at its disposal because it puts the holder of it at a competitive advantage (Porter and Miller, 1985). For a nation to develop, there is need to promote education of its citizenry at every educational level especially at tertiary level because the students leaving these high institutions of learning are entering into the decision-making process with the skills, they have acquired in the various high learning institutions. Education and information literacy would equip students and ordinary people with knowledge and skills for problem solving, ability to access and understand information on all aspect of the society and that will help to provide a sense of control over life circumstances. Therefore, the significance of this study is that it can help in bringing out the challenges associated with acquiring of information literacy skills and provide recommendations on how these challenges can be addressed. Since the study focused on fourth year LIS students, its findings can be used to inform the LIS faculty of the calibre of students they have trained so far. This will help management to plan and appraise the curriculum for LIS, such as strengthening or aiding in the introduction of an information literacy skill course or library programme if need arise. The research study will also be a source of reference for other researchers and students who would intend to assess the information literacy skills of University students. This study will contribute in the development of an information literacy policy at UNZA because according to the researcher's knowledge there is no information literacy policy at the University. The study will be beneficial to the students in that it will make

them aware of how much knowledge they have on information literacy skills and were they are lacking. The findings of the study will suggest some platforms were one can learn about information literacy skills. The study will also provide the researchers basic knowledge on how to conduct research. This will help researchers in case they wish to do` further research in future. The study is also necessary and timely because it is in partial fulfilment of obtaining the academic qualification of a bachelor's degree.

1.7 Limitations of the study

The study was limited to assessing information literacy skills among fourth year LIS students. This was done using respondents in the School of Education. Therefore, other schools were not considered. It did not look at other tertiary institutions in Zambia due to limited time and financial constraints on the part of the researchers. This limitation to fourth year LIS students meant that the findings cannot be generalised to other LIS students at UNZA or other learning institutions. The study also used convenient sampling where participants were selected because of their convenient accessibility and proximity to the researchers. This sampling method tends to be biased because it is based on the judgement of the researcher regarding the characteristics of a representative sample which is chosen on the basis of what the researcher thinks to be typical of the population under investigation. Therefore, the sample obtained was not a full representation of the total population and the results cannot be easily generalized and also, the validity of the results obtained depended on the truthfulness of the participants. To minimise the limitations, the researchers included as many fourth year regular LIS students as they could. The researchers also described the individuals who were left out during the selection process. This will allow the readers of the research to get a good grasp of the participants that were tested. It will also enable the readers to estimate the possible difference between the findings of this study and the results from the entire population. Despite the limitations of the study, it is however, hoped that the findings of the study will be found useful, not only by the other schools of the university but by other academic institutions in Zambia as well.

1.8 Ethical issues/considerations

When a research of this nature is being carried out, there are ethical issues that are taken into consideration. Higham (1980) notes that, ethical issues are moral values and beliefs of which society upholds in life to ensure right from wrong. Therefore, researchers adhered to the ethical principles. Researchers informed participants in advance on what the research would be all about and what it involved so that they were able to decide whether to consider participating in the research or not. In addition, the information collected from the participants was purely

used for research purposes and anonymity was preserved to guarantee confidentiality. Furthermore, researchers ensured that the research methodology adopted caused no harm to the participants in any way such as invasion of privacy, harassment, anxiety and discomfort.

1.9 Operational definitions of key terms

Information: is ideas, facts, imaginative works of mind and data of value potentially useful in decision-making, question answering, problem solving and all that which reduces uncertainty (Kaniki, 1991).

Literacy: The quality or the state of being literate, especially the ability to read and write (stein, 1966).

Knowledge: Facts information and skills acquired by a person through experience or education: the theoretical or practical understanding of the subject (Oxford dictionary, 1884).

Information Literacy Skills: A set of abilities to recognize when information is needed and have the ability to locate, evaluate, and use the needed information effectively (Nwobasi, and Ossaionah,2013).

Library and Information Science: An interdisciplinary or multidisciplinary devoted to applying theory and technology to the creation, selection, organisation, management, presentation, dissemination, and utilization of collections of information in all formats (Reitz, 2004).

CHAPTER TWO: LITERATURE REVIEW

2.1 Overview

This chapter presented a thorough review of literature related to information literacy skills in different learning institutions. Literature review seeks to enlighten the reader as well as researcher about what knowledge exists on the subject matter and gives guidance on how to accurately measure key variables of the research (Lampe, 2008). By critiquing different studies, the researchers were able to devise the best methodology to ensure that limitations of the reviewed studies were addressed. That said, the chapter reviewed literature in the following order: definitions of information literacy, importance of information literacy, knowledge on information literacy skills among students; search strategies among students; strengths and weaknesses in information literacy skills among students.

2.2 Definitions of information literacy

The terms information literacy and information literate were coined by Zurkowski in 1974 to refer to people who are able to solve their information problems by using relevant information sources and applying relevant technology. Zurkowski's work was the formative moment for information literacy. His approach logically perceived information literacy as a programmatic aim, and placed libraries and librarians at the core of this effort (Badke, 2010)

Vishala and Bhandi (2006) defined information literacy as a set of abilities requiring individuals to "recognize when information is needed and have the ability to locate, evaluate, and use effectively the needed information. They later on posit that information literacy is knowledge rather than simply skill, achieved by education rather than training, created through partnership between professionals and is a lifelong endeavour that is contextual in field and service access.

Additionally, Okon, Etuk and Akpan (2014) have identified that a "full understanding of information literacy is the realization that several conditions must be simultaneously present." They posit that first, people must desire to know, use analytic skill to formulate questions, identify research methodologies and utilize critical skills to evaluate experimented and experiential results. Second, people must also possess the skills to search for answers to those questions in increasingly diverse and complex ways. Third, once the users have identified what is sought, they should be able to access it.

2.3 Importance of Information Literacy

The American Library Association (1989) stated that, ultimately, information literate people are those who have learned how to learn. They know how to learn because they know how knowledge is organized, how to find information and how to use information in such a way that others can learn from them. They are people prepared for lifelong learning, because they can always find the information needed for any task or decision at hand. Furthermore, information literacy is a prerequisite for participative citizenship, social inclusion, and the creation of new knowledge, personal empowerment and learning for life.

It is vital to note that information literacy is very significant to any country especially the less developed countries like Zambia. Information literacy empowers people with necessary information that is relevant to better their lives and develop their countries. Through information literacy, people are able to combat those challenges that may be affecting them in the society and enhance various sectors in the country. This is possible because illiteracy and ignorance are reduced by giving the members of society the knowledge and skills that are important to improve their conditions of life. In other words when people are developed or empowered it is easy to develop the country in the sense that they contribute positively to the dimensions of development (Becker, 1981). Information literacy shapes and changes the way citizens in the country think, feel and act to various circumstances in the sense that it builds or strengthens the sense of pride, self-esteem and self confidence in the people (Becker, 1981). When we look at the profession librarian, information literacy is very vital in the sense that the librarian's job is an information-oriented profession. The librarian must be information literate themselves because they have to possess certain unique skills that include cataloguing, classification, indexing and abstracting. Librarians have to provide referral services and know how to use computers. Aside from the skills possessed, the librarian has to provide information to people that need it on a daily basis. This implies that librarianship is always a continuous learning process (Murphy and Moulaison, 2009).

2.4 Information literacy skills among students

A study done by Ilogho and Nkiko (2014) investigated the knowledge of information literacy and search skills of students in five selected private universities in Ogun state, Nigeria.

The study revealed that the preponderance of respondents from the five private universities had low levels of knowledge on information literacy and search skills. This presupposes an impediment to accessibility and utilization of available library resources.

The students' responses from the five selected private universities revealed that students generally did not have good information literacy skills, while a few demonstrated marginal knowledge. Apart from 62.67% of students who understood that the right word may not have been used when searching the library catalogue for a particular title, other results showed that far less than half of the students responded to questionnaire items correctly and most appeared not sure about their responses. It seemed they just filled the questionnaire because they had to. Consistently, over half of the students were wrong in their responses to the questionnaire items. This was an indication that students were either lacking in the knowledge of information literacy skills, or that they had very little knowledge of information literacy skills and application. The findings also portrayed that students were not very familiar with the various information sources and the types of information obtainable from them. The study found that one or more reasons could have been responsible for this ugly trend. Students may have never attended information literacy classes before, or that students may have attended classes occasionally and never paid close attention to what was taught in the classes. Further, the study found that it was also possible that information literacy programmes in these institutions were more theory oriented rather than practical hands-on.

The study concluded that sound information literacy skills are essential in knowledge acquisition in the twenty-first century and recommended among other things, that information literacy skills be integrated into the secondary and tertiary schools' curricula. Thus, the need for an enhanced and continuous library user education geared towards empowering students to be sufficiently familiar with information sources, mutual collaboration between teachers and librarians to ensure integrated mode of lecture delivery, constant advocacy and sensitization outreaches.

The above literature focused on five universities in Ogun State Nigeria presenting a larger sample size. Therefore, there was a possibility of making a large margin of error which may have caused the results not to be accurate, whereas this study reduced the sample size in that it was a case study focusing on a relatively small group of fourth year LIS students at the University of Zambia in order to obtain accurate results.

Another study conducted by Chang et al (2012) reported findings of a baseline study to understand the information literacy level of secondary school students in Singapore.

The study described an instrument for evaluating information literacy skills as well as assessing information literacy competency levels of secondary students in Singapore. In order to prepare for a more comprehensive national level study, the study was subsequently refined based on focus group discussions with several participating students, a review of the analysed results, as well as expert opinion was sought from other information literacy researchers. The focus group discussion provided feedback about the quantity and understanding ability of questions. The analysis results provided a better insight into the difficulty levels of questions. The study was also validated through assessment by three information literacy experts from Hong Kong, Kuwait and Thailand. Some long and complicated questions were deleted, and the language of some questions were simplified in order to minimise the effect of students' reading and comprehension abilities. Moreover, the points assigned to some questions had also been revised according to their difficulty levels. The findings of the study indicated that overall there was still scope to improve students' information literacy skills. That stated, higher order information literacy skills such as information use, synthesis, and evaluation demanded more attention, as comparatively lower levels of proficiency were observed in the study.

While this study had important information regarding the levels of knowledge on information literacy skills, it focused on two secondary schools. Our study focused on fourth your LIS university students about to enter society.

Another study done by Pinto and Fernández-Pascual (2016) examined knowledge about information literacy competencies among a population of social sciences students, as well as two subjective dimensions: students' belief in the importance of information literacy, hereafter called belief-in-importance, and their perceptions of self-efficacy, their confidence in their ability to succeed. The study found that the results by degree program revealed that students enrolled in information documentation showed greater knowledge in the categories of searching for and processing information than the participating students in other disciplines.

For all the university degrees studied, in relation to the average levels of real knowledge of information competencies on the part of students, there were significant differences between the four categories of competency. Only five competencies which were assessing the quality of information resources, knowing the most relevant authors and institutions within your subject area, communicating in public, writing a document, and knowing the code of ethics in

your academic or professional field were found to have a similar average for students in all the degree programs. Statistically significant differences were detected between men and women concerning the categories of processing and communication of information.

Furthermore, findings from the study reviewed that social sciences students showed greater knowledge of information literacy competencies in the categories of evaluation and communication-dissemination of information. Audio-visual communication students obtained the highest levels in the communication-dissemination category, followed by students of information documentation and journalism. Meanwhile, journalism students achieved their best scores on actual knowledge of the competencies belonging to the category of evaluation, although those same students assigned the highest scores in the belief-in-importance and self-efficacy dimensions to competencies belonging to the processing category. At the other end, primary education students showed the lowest scores on actual knowledge of competencies within the categories of search and evaluation. Social work students received minimal scores in the categories of processing and communication-dissemination of information. For all the university degrees studied, in relation to the average levels of real knowledge of information competencies on the part of students, the study concluded that there were significant differences between the four categories of competency.

Despite the study being relevant, it was comparative in nature in that it revealed the different levels of information literacy competency among Social Science Undergraduates in various programmes of study. The study did not focus on a specific programme therefore this study placed more emphasis on one programme of fourth year students of Library and information science at UNZA.

2.5 Commonly used information Search strategies among students

A study done by Baldwin, Gadd and Balatsoukas, (2010) aimed at investigating students' information searching strategies when undertaking literature reviews for individual, 'final-year' dissertations, projects and to design new approaches to literature reviews that take account of both students' existing and required search skills.

The research team was seeking a better understanding of students' knowledge and ability to use the search engines and databases commonly available to undergraduates. These included the Online Public Access Catalogue, Metalib, and Google (the internet search engine). This experimental study focused on the information searching behaviour of students in terms of several characteristics including: the type of information systems used; the number and type of

queries submitted; the number of successive searches undertaken; the use of relevant feedback mechanisms; and the number of search results viewed.

As detailed above, research into students' information searching behaviour indicated that when searching for information students avoid the use of complex search strategies, such as the use of advanced search techniques and the formulation of complex queries. Also, further findings showed that students tend to use Google when searching for information on the web but only a few of them found it easy to locate useful information. Additionally, other researchers revealed that students apply "satisficing" approaches to their searching behaviour which means that they usually complete a task as soon as they have identified a sufficient, but not an optimal, number of resources.

Further whichever system used for their search there was a wide variability in the average number of results retrieved per query for instance when using google the mean number of results retrieved per participant was 22 million results. This variability can be attributed to the type of systems used by the participants to search for information. Also, when presented with extensive numbers of results the participants had no strategy for evaluating the quality of the information retrieved other than its apparent relevance to the subject area. Consequently, there was little or no evidence of student consideration of the usefulness and quality of the results accessed and downloaded as presented to the students. They approached the search problem with a view simply to locate a sufficient number of documents containing enough information to complete their task.

The endorsed findings were that the students observed had no overall strategy for their information search and showed no consideration of a structured approach to searching using predefined keywords. All the participants in the study commenced their search using a simple string of words and then expanded or narrowed the search by the addition or truncation of the initial word string. They showed a preference for using the Google search engine but had an awareness of, and were prepared to use, other search facilities either as a first choice or in conjunction with Google. Students lacked the knowledge and skills to make efficient effective use of the search facilities. They had little or no knowledge of the use of Boolean operators. They revealed a lack of training and a lack of experience in the use of information retrieval systems. This lack of experience was amplified by 'problems' resulting from misplaced expectations of the systems being used.

This study focused on the information searching behaviour of students in terms of several characteristics. These included the type of information systems used, the number and type of queries submitted, the number of successive searches undertaken, use of relevant feedback mechanisms and the number of search results viewed, thereby making the research process more tedious and opening room for possible errors in the findings while our study`s objective was specifically to identify the commonly used search strategies.

A study done by Eke-Okpala, Omekwu and Agbo (2014) on Internet Search Strategies Employed by Library and Information Science Students of University of Nigeria, For Research. The aim of the study was to examine the Internet search strategies employed by undergraduate students of Library and Information Science at the University of Nigeria, Nsukka for research. The study looks at the Internet as a new technological way to disseminate information to a larger population of people in a more speedy and accurate way.

Further the study indicated that the Internet has increasingly become a valuable asset in education in terms of learning, teaching, and research. Its role in information handling, packaging, storing, retrieval and dissemination is at the root of any meaningful academic environment all over the world.

On search strategies, the study concluded that finding information on the Internet requires the ability to use search engines, knowledge of search techniques, browsing through information, a cognitive capacity to organize searches, the ability to execute a search, an understanding of how information is organized, critical-thinking skills, and a working knowledge of Internet notations. It was also evident in the study that educators needed to assist students in the development of these essential skills for manipulating the Internet. Further it was revealed that the use of the Web required the mastery of certain strategies which in turn required specific Web-related skills. The study identified some of the frequently used searching strategies such as Boolean search commands like "and, or, near, none, not", power searching commands such as "in titles:, sites:, url:, link:, *, ?" and search assistance features such as "related search, clustering and stemming".

The above literature examined the Internet search strategies employed by undergraduate students of Library and Information Science at the University of Nigeria, Nsukka for research and did not consider other platforms. Therefore, this study`s objective was to identify the commonly used search strategies not just on the internet but also on other platforms that provide information.

2.6 Strengths and weaknesses in Information Literacy skills among students.

A study done by the International Federation of Library Associations and Institutions (1999) aimed at assessing the inclusion of information literacy and skills training in the undergraduate curriculum.

The study found that students were unaware of the range of sources of information that could be used to identify relevant information; they had a poor understanding of the 'information landscape'. For example, many students were unaware of the role of the Online Public Access Catalogue, (OPAC), assuming incorrectly that articles as well as books could be found via the OPAC. This led to great frustration when searching for information. The majority were unaware that indexes to articles could be found on CD ROMs that related to their discipline. They generally had little idea of the production of knowledge or the relative merits of different sources of information. Further, the study showed that although aware of Boolean logic, students had difficulty creating search strategies. They did not appreciate how information is structured in systems nor did they appreciate that systems work in very different ways. Help systems such as Truncation, synonyms, the use of fields were rarely used. Systematic approaches for constructing searches, narrowing or broadening searches were not evident. The success rate of the students in identifying relevant information was low. Students were unfamiliar with the organisation of the library environment and found it difficult to locate materials. Developing insights and extrapolating also proved very challenging for the students. This seemed to be partly due to a lack of confidence, the fear of 'getting it wrong' and also a lack of experience in using information to creatively derive their own ideas.

However, the study also found that students were capable in the areas of extracting information, note taking, synthesising the information and then developing impressive presentations. Overall their self-directed learner skills seemed a little weak. The study concluded that attitudes, knowledge and skills in the area of information literacy needed to be enhanced and developed.

Despite the above literature being relevant to our study by providing information on the weaknesses and a few strengths in information literacy skills among students, the study had a larger population in that it included all undergraduate students at the university and also members of staff of the library were involved. It also included Information Technology literacy because the university had technological programs of study. However, this study only looked

at information literacy skills among LIS fourth years and also had a smaller population size hence more accurate and correct finding were expected.

Another study done by Hart and Williams (2010) to investigate the effectiveness of an information literacy intervention for first year engineering students at the Cape Peninsula University of Technology (CPUT).

The study found that students were not prepared for the demands of university education. They lacked reading, writing and information-handling skills. The study found significant differences between students from the historically advantaged campuses and those from the historically disadvantaged University of the Western Cape and Peninsula Technikon in the area of information literacy.

The study posits that, "successful information literacy programme must be introduced early and be reinforced often, with assignments of increasing complexity''. It later recognised that lack of recognition for the need of information literacy education by academics presented a challenge, which might be worsened by online delivery of courses. Many academics just assumed that students had already acquired information literacy skills before arriving at university. Further, the study found that students did not devote time to activities which do not count towards their official assessments.

Furthermore, the Study found that most students' first choice in information-seeking was the Internet. It later concluded that reliance on Internet sources affected negatively the quality of students writing. Students understandably liked the convenience of the Internet but were often unable to evaluate the credibility of its sources.

Despite the study providing information relevant to this research, the studies data collection instruments were through assignments, quizzes and workshops. It also looked at students' background factors such as home language and computer literacy if these had an impact on information literacy. This study only used questionnaires to collect data and it did not consider background information of LIS students but rather focused on their information literacy skills acquired during their learning process at UNZA hence it was straightforward and precise.

In the study on challenges of information literacy skills and perception in Colleges of Education in Nigeria, Anyaoku, Anunobi and Eze (2015) identified lack of capacity development or training opportunities; increasing workload; poor facilities; no provision for mentoring and lack of regulation of curriculum on information literacy as the major challenges to information

literacy programmes. The study revealed that the major challenge faced by students of the university regarding information literacy skill level was the need to learn to navigate through the online public access catalogue (OPAC). According to the study, the interest of students in learning information literacy skills was minimal and this made them not to possess required attributes of an information literate person.

This study was delimited to two secondary schools in Owerri West Local Government Area of Imo State, South East, Nigeria, namely Holy Rosary International College, Owerri and Boys Secondary School, New Owerri. The study highlighted the level of information literacy skills of the students, their knowledge about information ethics and strategies they adopt in satisfying their information needs. However, this study focused on fourth year LIS students at UNZA.

2.7 Summary

The need for information literacy skills is undeniably crucial. However, there are barriers that exist in relation to the acquiring of information literacy which causes students to have poor information literacy skills and end up making bad decisions. The literature indicated that some of the factors that affect students from acquiring information literacy skills is due to lack of interest in learning information literacy skills, poor search strategies employed when searching for information, lack of confidence and also a lack of experience in using information to creatively derive their own ideas. The literature also recommended that information literacy education should be provided to every student as this brings about a growth in information literacy competence.

CHAPTER THREE: RESEARCH METHODOLOGY

3.1 Overview

This chapter covered the following areas, research design, target population of the study, sample and sampling procedures, data collection instrument and processes and data analysis.

3.2 Research design

A research design is used to structure the research, and show how all of the major parts of the research project will work together to address the central research questions. A research design is a blueprint for conducting a study with maximum control over factors that may interfere with the validity of the findings (Burns and Grove, 2003). The study design for this research was a case study and was exploratory in nature. A case study method selects a small geographical area or a very limited number of individuals as the subjects of study, therefore this approach was appropriate for this research as it enabled the researchers to assess and explore contemporary real-life phenomenon through detailed contextual analysis of both qualitative and quantitative information within a specific context.

Research design is also exploratory in nature. Explorative studies are undertaken when a new area is being investigated or when little is known about an area of interest, it is used where the researcher has an idea or has observed something and seeks to understand more about it, exploratory research also attempts to lay the ground work that will lead to future studies (Zainal, 2007). Therefore, this approach was ideal for this research where not much was known about the phenomenon under investigation. Thus, it was chosen in order to bring to the fore information about information literacy skills among fourth year LIS students at the University of Zambia owing to the fact that these students pursue an informational program and hence are expected to be information literate. In this way, findings from the research laid a groundwork for subsequent researches in this field.

In addition, the study also employed both quantitative and qualitative research approaches. A qualitative approach is a systematic subjective approach used to describe life experiences and situations to give them meaning. Hence, this approach was used by researchers to explore the behaviour, perspectives, experiences and feelings of people and emphasizes the understanding of these elements (Burns and Grove, 2003). The rationale for using a qualitative approach in this research was to explore and describe the views of LIS students on their information literacy skills. Hence, a qualitative approach was appropriate to capture their views on information

literacy and this made it possible to draw conclusions based on the respondents' perspectives and understanding.

On the other hand, quantitative method involves numerical measurements. Quantitative approach has the benefit of allowing the researcher to make conclusions with a known level of confidence, it permits making of exact statements (Weiss, 1998). Therefore, the quantitative aspect of this study was to give an exposition of statistically meaningful data of how LIS students search, assess and use information.

Thus, the rationale for combining both qualitative and quantitative approaches was based on the researcher's recognition of the fact that when either of the approaches are used in exclusion of the other, it would have crucial limitations and biases. A combination of both approaches is to give access to not only the numerical information, for instance what sort of information search strategies students use to seek information, but also the reason for the use of those strategies.

3.3 Target population of the study

A population is the total number of units from which data can be collected, such as individuals, artefacts, events or organizations. Burns and Grove (2003) described a population as all the elements that meet the criteria for inclusion in a study. This means those who are to make up the total population have to be eligible and meet some form of characteristics to be part of the target population.

The approximated total population for this research was 130 fourth year students of library and information science, and the criteria for inclusion in this study were:

- Registered library and information science students at the University of Zambia.
- Only fourth year regular students of library and information science.

Parallel and distance fourth year LIS students were excluded from this study because the researchers did not have access to them and had insufficient financial resources and limited time.

3.4 sample and sampling procedures

A sample is a set of people selected from a larger population for the purpose of a study (Kombo and Tromp, 2006). A sample of 80 fourth year regular LIS students was drawn out of the approximated total population of 130 in the department of library and information science,

School of Education at the University of Zambia, Great East Road campus for the 2018/2019 academic year.

For this study, researchers used convenient sampling technique in sampling the students. Convenient sampling is the non-probabilistic sampling technique where subjects are selected because of their convenient accessibility and proximity to the researcher (Diamond, 1989).

Therefore, researchers having access to the regular fourth year LIS students in term of proximity but not having access to the actual list of all fourth year LIS students chose this sampling technique. With this technique, there was assurance that the findings would be representative and reasonable to generalize the results obtained from the sample to the entire population.

3.5 Data collection instrument

The data collection instrument that the research used was a questionnaire. A questionnaire is a defined instrument used for collection of data from the respondents using written questions (Burns and Bush, 2010). The questionnaire was deemed useful because it is time saving, it generates a large amount of data and sensitive topics are easily answered in private. It has both closed and open-ended questions to permit respondents to express themselves. For this reason, close-ended questions were used for capturing information that was processed and analysed quantitatively. Quantitative information was useful for making measurements and identifying trends necessary for this study. On the other hand, open ended questions were used in obtaining respondents views on the topic which were analysed by qualitative methods.

3.6 Data analysis technique

Quantitative data collected from questionnaires administered to the respondents was analysed by the use of Statistical Packages for Social Sciences (SPSS). Open ended questions in the questionnaires were analysed using the same software by the use of generating common themes from responses and were done after closing the responses as well as coding them. The reason for using SPSS was that it is a comprehensive and flexible statistical analysis and data management software that allows for simple creation of frequency tables, descriptive statistics, exploratory statistics and cross-tabulation tables. Statistical package for social science is a user-friendly software and is capable of automatically converting data into percentages and other statistical interpretations and it is easier to analyse the different variables involved and assess their effect on each other (Argyrous, 2005).

3.7 Summary

This chapter gave a general overview of the methods used in the study. The relevant methodological issues such as research design, total population, sample size and sampling procedure were discussed in detail. The chapter also described the process of data collections and analytical methods used.

CHAPTER FOUR: PRESENTATION OF RESEARCH FINDINGS

4.1 Overview

This chapter presented the findings of the study undertaken to assess information literacy skills among fourth year library and information science students at the University of Zambia. The specific objectives were to determine the level of knowledge on information literacy skills, to identify the commonly used information search strategies and to identify areas of strength and weakness in information literacy skills among fourth year LIS students.

4.2 Characteristics of respondents

A total of 80 self-administered questionnaires were distributed to fourth year LIS students at UNZA. Out of the 80 questionnaires, 73 questionnaires were returned giving a response rate of 91%. However, out of the 80 distributed questionnaires, 7 questionnaires were reported lost by some of the respondents who were followed up. From the returned questionnaires, 48% were males while 52% were females. Regarding the age, 53 of the respondents were aged below 25 years, 18 were aged between 25 -29 and 2 were aged above 30 years. The information is presented in table 1 below.

Table 8: Characteristics of respondents

Variable	Value	Frequency	Percentages
Gender	Female	38	52.1
	Male	35	47.9
Age	<25 yrs.	53	72.6
	25-29yrs.	18	24.7
	≥30years.	2	2.7

4.3 Information literacy skills among students

This section presents findings of the study on student's information literacy skills. As illustrated in Figure 1 below, respondents were asked to indicate if they had any idea about the concept of information literacy. Of the options provided, 43.8% of the respondents indicated that they had a clear idea about the meaning of the concept information literacy, followed by 28.8% who responded that they had a vague idea, 17.8% did not know the actual meaning of information literacy, while 9.6% had heard or read about information literacy but did not understand its meaning.
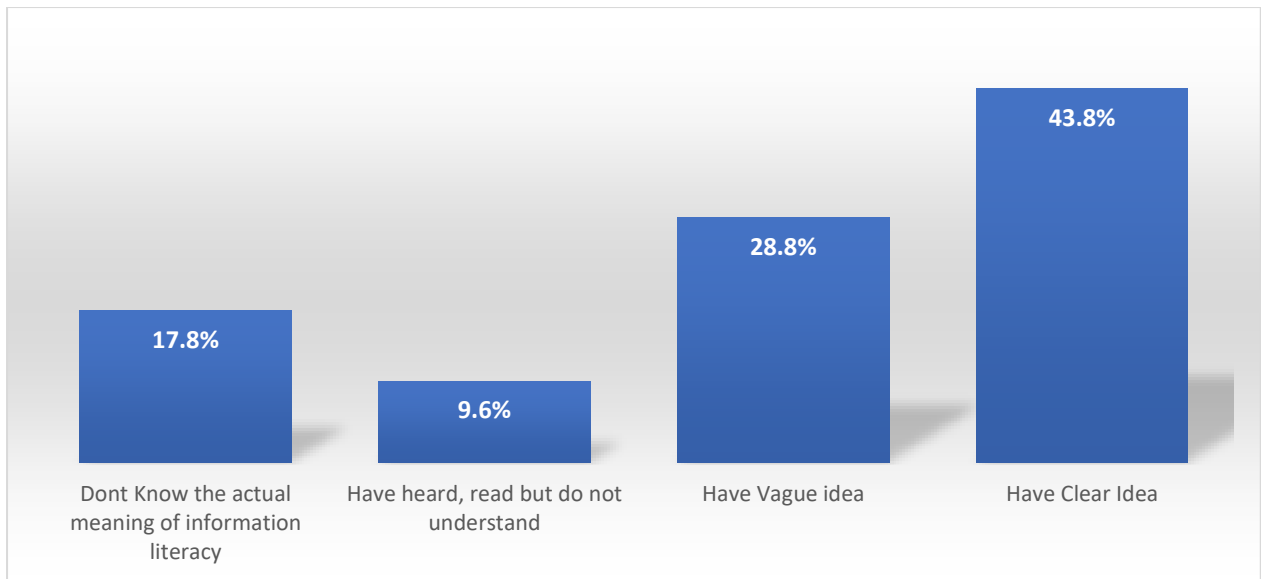
Figure 4: Students' ideas on information literacy

Respondents were further asked to define information literacy in their own words. It was observed that 30.1% of the respondents understood information literacy as the ability to recognise when information is needed while 30.1 % equally stated that it was the ability to use information in solving problems. 24.7% summarised information literacy as knowledge about information, whereas 15.1% of the respondents did not state or failed to define information literacy, as shown in table 2 below.

Table 9: Students definition of information literacy

Students definition of information literacy	Frequency	Percent (%)
ability to recognise when information is needed	22	30.1
ability to use information in solving problems	22	30.1
knowledge about information	18	24.7
not stated	11	15.1
Total	73	100.0

Respondents were asked how they learnt about information literacy. Of the total responses, 50.5% respondents learnt about information literacy through a first-year compulsory course (LIS1010). 31.8% of the respondents learnt about it from the Internet, while 11.2% learnt about it through friends and 6.5% learnt about it through library training, as shown in table 3.

Table 10: Source of training for information literacy

source of training for information literacy	Frequency	Percent (%)
LIS1010 course	54	50.5
From the internet	34	31.8
From Friends	12	11.2
Through Library training	7	6.5
Total responses	107	100

Respondents were further asked to rank the usefulness of the training they acquired on information literacy. 60.3% stated that the training was useful, 34.2% stated that the training was very useful while 5.5% stated that the training was not useful.
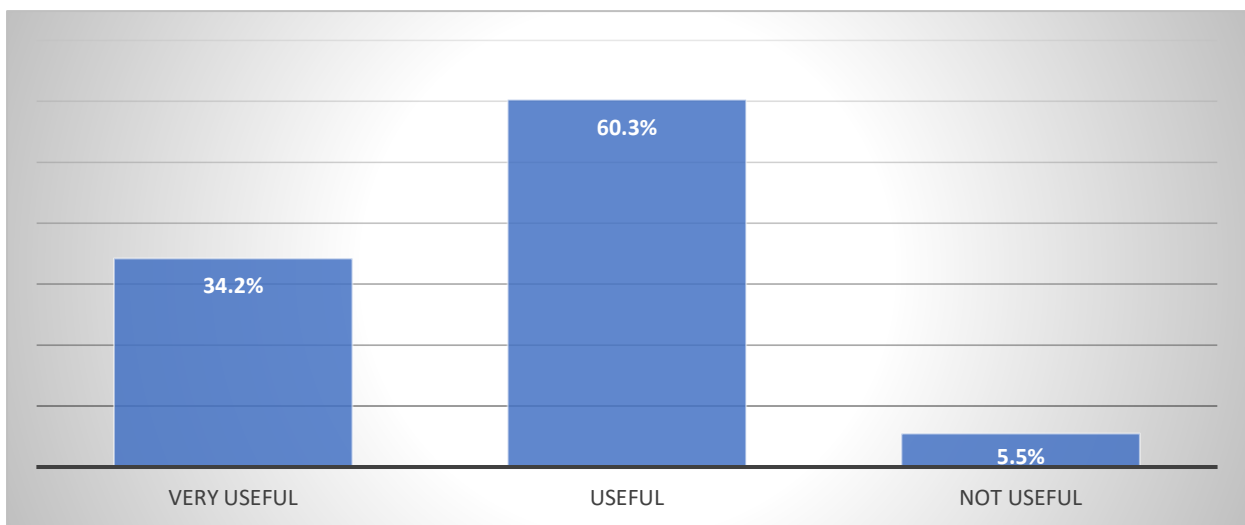

Figure 5: Usefulness of the training about information literacy

Respondents were asked as to what extent information literacy had helped them in their academic performance. As presented in table 4 below, 57.5% of the respondents reported that information literacy skills had helped them in their academic performance to a large extent while 41.1% stated to a moderate extent and 1.4% responded that information literacy skills helped to a less extent.

Table 11: Extent to which Information literacy has helped students' academic performance

Extent to which information literacy help has helped students' academic performance	Frequency	Percent (%)
Large Extent	42	57.5
Moderate Extent	30	41.1
Less Extent	1	1.4
Total	73	100.0

Respondents were able to rate their ability to search for information. 31% rated themselves as excellent, 58% of the respondents rated their ability to search for information as good and 9% of the respondents rated their search skills as average. None of the respondents rated themselves as poor.

Additionally, students were asked to indicate whether they were able to check the accuracy of information they retrieved from various sources, 83% agreed that they were able to check the accuracy of information, 13% indicated that they were unable.

Respondents were asked how they decided if a book contains information on a topic, they were interested in. As indicated in Table 5, 16.4% of the respondents chose 'Checking if the table of contents of a book lists a chapter on their topic', 5.5% chose 'Find the book and see if the topic was listed in index', 2.7% did not know how to decide or left the question unanswered.

Table 12: Ways of finding information about your topic in a book

Ways of deciding if a book contains information on your topic	Frequency	Percent (%)
Checking if the table of contents of a book lists a Chapter on your topic	12	16.4
Title includes the words of your topic	7	9.6
Find the book and see that your topic is listed in index	4	5.5
All the Above	48	65.8
not stated	2	2.7
Total	73	100.0

Respondents were asked what would be the best tool to use to find research articles. 42.5% of the respondents chose the journal while the library catalogue was selected by 26% of the respondents. The option "Other" was selected by 20.5% of the respondents where the internet or search engines such as Google were mentioned the most by the students. Only 1.4% of the respondents mentioned newspaper and 9.6% did not know which tool they preferred for finding research articles.

Table 13: Tools for finding research articles

Suggested tools for finding research articles	Frequency	Percent (%)
Journals	31	42.5
Library Catalogue	19	26.0
Newspaper	1	1.4
Don't Know	7	9.6
Other(s)	15	20.5
Total	73	100.0

Table 7. represents the example of using BOOLEAN operator OR. It was observed from table 7 that 49.3% of the respondents chose OR, 37% chose the AND operator, 2.7% NOT operator and 11% did not know.

Table 7: Respondents use of BOOLEAN operators

BOOLEAN operators	Frequency	Percent (%)
OR	36	49.3
AND	27	37.0
NOT	2	2.7
Don't know	8	11.0
Total	73	100.0

In order to know a subject, respondents were provided with a list of suggested tools they would consult. As presented in table 8, 38.4%, chose the option encyclopaedia, 28.8% chose Online Database, 12.3% of the respondents didn't know. Book was selected by 11% of the respondents, 6.8% chose the Journal, 2.7% of the respondents answered 'others' and they specified the internet.

Table 8: Suggested tools to consult when finding out about a subject

Suggested tools to consult when finding out about a subject	Frequency	Percent (%)
An Encyclopaedia	28	38.4
Online Database	21	28.8
Book	8	11.0
Journal	5	6.8
Don't Know	9	12.3
Others (please, specify)	2	2.7
Total	73	100.0

Respondents were then asked which section of a book they would consult to find other documents on the same topic. Table 9. indicated that 53.4% of the respondents were familiar with the references as a tool for finding other documents. 2.7% indicated glossary, 9.6% indicated index and 23.3% indicated table of contents and 11% did not know.

Table 9: Sections in a book to consults for finding other documents

Sections in a book to consults for finding other documents	Frequency	Percent (%)
The References	39	53.4
The table of content	17	23.3
The Index	7	9.6
The Glossary	2	2.7
Don't know	8	11.0
Total	73	100.0

Table 10 indicated how respondents were asked how they would search a catalogue to find documents of an author whose name was known, 87.7% of the respondents chose by author, 6.8% of the respondents chose by title, 5.5% didn't know.

Table 10: Search terms for finding document

Search terms for finding document	Frequency	Percent (%)
By author	64	87.7
By title	5	6.8
Don't know	4	5.5
Total	73	100.0

Respondents were asked how they could check the accuracy of information in a book. As indicated in table 11, 69.9% of the respondents chose 'all the above', 12.3% chose 'checking the references', 5.5% chose 'Checking the credibility of the Author', 4.1% chose 'Checking the credibility of the publisher' 8.2% did not know how to decide or left the question an answered.

Table 11: Ways of checking the accuracy of information acquired in a book

Ways of checking the accuracy of information acquired in a book	Frequency	Percent (%)
Checking the references	9	12.3
Checking the credibility of the author	4	5.5
Checking the Credibility of the publisher	3	4.1
All of the Above	51	69.9
Don't know	6	8.2
Total	73	100.0

Further, from the analysis above a set of seven (7) questions were selected to examine the respondent's information literacy skills. Those respondents that answered one to three questions correctly were rated poor, those that answered four to five questions correctly were rated average and those that answered six to seven questions correctly were rated good. In total the following were their scores, 42% scored average, 37% scored poorly and 21% good.

Table 12: Total scores out of 7 questions examining respondents information literacy skills

Rating	Scores	Number of respondents	Percent (%)
Poor	1 – 3	27	37
Average	4 – 5	31	42
Good	6 – 7	15	21
Total		73	100

4.4 Students information search strategies

Students were asked how often they searched for information in order to solve a particular information need. 47% of the respondents indicated that they searched for information very often, 45% often searched for information and 8% of the respondent indicated that they rarely searched for information.

When asked about the type of information search strategies they applied, respondents indicated as follows; 26.1% used open-ended search strategies, 22.4% used Boolean operators, 19.1% used known searching, 12.9% used phrase searching, 7.1% used string searching, 6.6% used truncation and 5.8% used proximity operators. The results were presented in table 13 below.

Table 13: Information search strategies

Information search strategies	Frequency	Percent (%)
Open-ended	63	26.1
BOOLEAN Operator	54	22.4
Known Searching	46	19.1
Phrase Searching	31	12.9
String searching	17	7.1
Truncation	16	6.6
Proximity Operator	14	5.8

As shown in table 14, respondents were asked to indicate the benefits of using appropriate search strategies when searching for information. Their responses were as follows; 39.7% stated that using search strategies makes it easy to find information that they need quickly, 38% stated that using search strategies helped to retrieve accurate information, while 9.6%

stated that using search strategies narrows the search for information and equally 9.6% of the respondents also stated that information search strategies gave access to a wide range of information. 2.7% did not state.

Table 14: Benefits of using search strategies

Benefits of using search strategies	Frequency	Percent (%)
makes it easy to find information that you need quickly	29	39.7
helps to retrieve accurate information	28	38.4
narrows the search for information	7	9.6
access to a wide range of information	7	9.6
not stated	2	2.7
Total	73	100.0

The responses respondents gave when asked what the consequences of not using search strategies in information are shown in table 15 below. 82.2% attributed the consequences of not using search strategies to false drops, 6.8% stated that the other consequence is that it took too much time to retrieve information. 1.4% stated the difficulty to find information as another consequence and 9% did not state any consequence.

Table 15: Consequences of not using search strategies

consequences of not using search strategies	Frequency	Percent (%)
false drops	60	82.2
too much time to retrieve information	5	6.8
difficulty to find information	1	1.4
not stated	7	9.6
Total	73	100.0

4.6 Students areas of strength and weakness in information literacy skills

Respondents were asked if they encountered any problems when practicing information literacy skills. The responses showed that 53% had atleast one problem they encountered while 47% answered that they did not encounter any problem in practicing information literacy skills.

In relation to the above question the 53% of respondents who said yes where further asked to state the information literacy skills they had problems in applying or practicing. The responses were as follows; 14.5% chose 'identifying when information is needed' 18.4% chose 'evaluating the information retrieved', 21.1% chose 'analysing the information', 14.5% chose 'presenting the information', 31.6% chose 'organising of information'. This information is shown in table 16 below.

Table 16: Problems encountered in applying information literacy skills

Problems encountered in applying information literacy skills	Frequency	Percent (%)
Organising of information	24	31.6
Analysing the information	16	21.1
Evaluating the information retrieved	14	18.4
Identify when information is needed	11	14.5
Presenting the information	11	14.5
Total	76	100.0

Respondents were asked ways in which lack of information literacy skills affect student's academic performance. 90.4% of the students answered poor academic performance while 9.6% did not stated.

In relation to how information literacy skills of students can be improved. Respondents were asked to make recommendation and 45.2% answered to increase awareness of information literacy, 34.2% said introducing a compulsory information literacy course for all students, 4.1% said introduce information literacy as a programme and 4.1% did not state their recommendation.
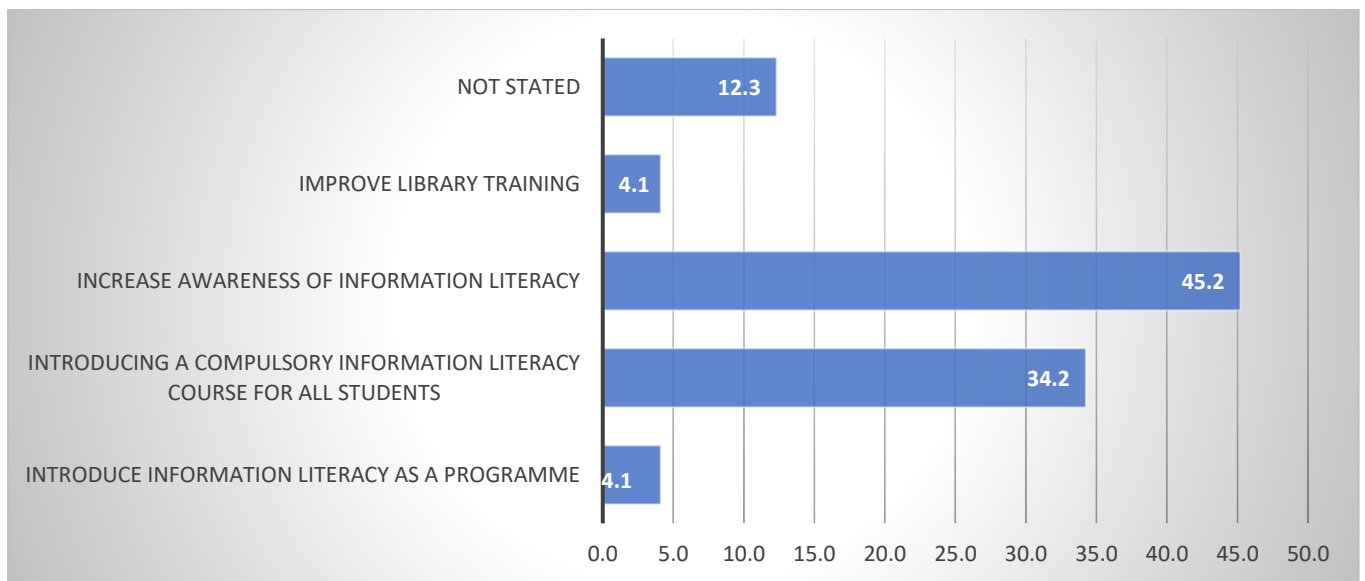
Figure 6: Students recommendation for improving information literacy skills

4.7 Summary

This chapter examined data analysis and interpretation. It presented the findings of the study which were shown using tables and bar charts. The respondents were all regular fourth year LIS students. 52% were females while 48% were males. Most of the students were found to have a clear idea of what information literacy is about as they were able to give brief definitions of the concept and stated how this affected their academic performance. On the search strategies the respondents indicated that they were most familiar with open-ended searching and over half of the students were also able to check for the accuracy of information they retrieved. Further students were able to highlight the benefits of using search strategies as a way that makes it easy to find information that one needs quickly. The consequences of using search strategies where mostly attributed to false drops. However, the respondents faced a weakness in the skill of organising of information. Finally, the major recommendation by the students was to increase awareness of information literacy skills.

CHAPTER FIVE: DISCUSSION OF FINDINGS

5.1 Overview

This chapter presented the discussion, the conclusion and recommendation regarding information literacy skills among fourth year LIS students at UNZA. The specific objectives were to determine the level of knowledge on information literacy skills among fourth year LIS students, to identify the commonly used information search strategies among fourth year LIS students and to identify areas of strength and weakness in information literacy skills among fourth year LIS students.

5.2 Information literacy skills among LIS students

The study sort to determine the information literacy skills among fourth year LIS students. The findings first sort to obtain background information as to whether the students had any idea about information literacy and whether they were able to define the concept in their own words. The study revealed that the majority of respondents did not completely know how to define information literacy. Most of the respondents had an idea but seemed not to understand the concept completely.

Therefore, the study examined the information literacy skills of respondents. Majority of the respondents scored average, while the remaining group of respondents scored poorly and only a few of the respondents had scored good on their information literacy skills. These findings are not similar to the findings of Gowri and Padma (2018), who in their study concluded that most of the engineering students do possess various information literacy skills which are very much required in this modern information-filled world. Perhaps, this is because the majority of fourth year LIS students were not equipped with adequate information literacy skills to be considered good or competent enough. The implication is that LIS students will be graduating with poor information literacy skills and they may not be able to carry out their duties professionally when employed.

5.3 The commonly used information search strategies among fourth year LIS students

In relation to the commonly used information search strategies, majority of the respondents indicated that they searched for information very often and the most commonly used information search strategy was the open-ended strategy which involved keywords search using search engines like Google. Whereas, the least used information search strategy was the proximity operator which incorporates the use of operators like NEAR and FB (followed by). These findings are comparable to the findings of Baldwin, Gadd and Balatsoukas (2010) who

reported that participants lacked the knowledge of how to use advanced search strategies. All of the participants formulated queries using simple words or free text and there was no evidence of consideration of structured word searching using systematically selected keywords. Perhaps this could be because open-ended search strategy enabled LIS students to find information easily and quickly. This could be confirmed by the fact that when the respondents were asked about the benefits of using information search strategies, most of them answered that information search strategies makes it easy to retrieve accurate information that you need quickly.

Also, this could mean that they may have been trying to avoid more complex search strategies and opted for much easier search strategies. This could be attributed to the kind of training on information literacy skills. Maybe students were not adequately trained on how to use other search strategies. The inability to use other information search strategies means that LIS students will be able to retrieve information easily and quickly but unable to retrieve accurate information consistently. The long-term effect is that LIS students will not be able to efficiently locate, evaluate, effectively use and clearly communicate information in various formats at their place of work or when assisting others on information finding.

5.4 Areas of strength and weakness in information literacy skills among fourth year LIS students

The study sort to identify areas of strength and weakness in information literacy skills among fourth year LIS students. Majority of the respondents agreed to having encountered problems in practicing information literacy skills. Most of the respondents had problems in organising information, a few said that they had problems in presentation and identifying when information was needed. Therefore, the study concluded that presentation and identification of information were the respondent's possible areas of strength because only a few acknowledged having challenges in these skills.

The above findings are not similar with the findings of the International Federation of Library Associations and Institutions (1999), which concluded that the success rate of the respondents in identifying relevant information was low. Students were also unfamiliar with the organisation of the library environment and found it difficult to locate materials. However, the study also found that students were capable in the areas of extracting information, note taking, synthesising the information and then developing impressive presentations. Because LIS students can quickly identify when there is need for information, the implication is that they

can be able to locate, evaluate and use information. However, the fact that they still have weaknesses in other skills, means that they may not be able to effectively solve problems, make decisions and become independent lifelong learners.

5.4 conclusions

Most of the students were found to have a clear idea of what information literacy is about as they were able to give brief definitions of the concept and stated how this affected their academic performance. However, upon examination of the students by giving them questions, it was observed that the majority had average to poor information literacy skills. This creates an area of concern in that LIS fourth year students are expected to possess exceptional skills in this competency as it is there field of expertise. On the search strategies the respondents indicated that they were most familiar with open-ended searching and over half of the students were also able to check for the accuracy of information they retrieved.

Further students were able to highlight the benefits of using search strategies as a way that makes it easy to find information that one needs quickly. The consequences of using search strategies where mostly attributed to false drops. This was a good indication because it meant that students understood the importance of information literacy skills in their academic performance. However, the respondents faced a weakness in the skill of organising the information. This meant that fourth year LIS students are not equipped enough in information literacy skills and may face challenges in their professions when it comes to organising information which must be presented to an audience. Finally, the major recommendation from the respondents was to increase awareness of information literacy skills.

5.5 Recommendations

After a careful analysis of the findings of the report, the study recommended the following action.

 The LIS department to re-introduce LIS9045, a purely information literacy course as a compulsory course from second year to fourth year because first years already have a component of information literacy in the compulsory course LIS1010 which is a foundational course. Through LIS9045, students will be able to advance their knowledge with assignments

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APPENDICES

APPENDIX 1

QUESTIONAIRE

Identification no	

THE UNIVERSITY OF ZAMBIA

SCHOOL OF EDUCATION

DEPARTMENT OF LIBRARY AND INFORMATION SCIENCE

QUESTIONNAIRE:

Questionnaire for the assessment of information literacy skills among fourth year Library and Information Science students at the University of Zambia.

Dear Respondents,

We are fourth year students at the University of Zambia, currently pursuing a Bachelor's Degree in Library and Information Science. We are carrying out a research on the assessment of information literacy skills among fourth year Library and Information Science students at the University of Zambia. Your participation will be highly appreciated.

Instructions

1. Please answer questions as freely as possible as the information will be kept as a secret.
2. Please do not write your name on the questionnaire.

3. Tick (√) your responses in the boxes provided appropriately and, in the spaces, available, write additional information that you may wish.

We assure you that the information you shall give will be treated with utmost confidentiality and will be used only for academic purposes.

PART A: BIO DATA

Q1. What is your gender?

a) Male ☐

b) Female ☐

Q2. How old are you?

a) 15 – 19 ☐

b) 20 – 24 ☐

c) 25 – 29 ☐

d) 30 – 34 ☐

e) 35 – 39 ☐

f) 40 – 44 ☐

g) 45 and above ☐

Q3. What is your mode of study?

a) Regular ☐

b) Parallel ☐

PART B: BACKGROUND INFORMATION

Q4. Do you have any idea about information literacy?

a) Don't know the actual meaning of information literacy ☐

b) Have heard, read but do not understand ☐

c) Have vague idea ☐

d)   Have clear idea ☐

Q5. In your opinion, what is Information literacy?

…………………………………………………………....

…………………………………………………………………

Q6. How did you learn about information literacy? Tick as many as apply.

a) LIS1010 course ☐

b) From friends ☐

c) From the Internet ☐

d) Through library training ☐

e) Others (please specify) ……………………………………….

Q7. How useful was the information you acquired about information literacy?

a) Very useful ☐

b) Useful ☐

c) Not useful ☐

Q8. To what extent has information literacy helped you in your academic performance?

a) Large extent ☐

b) Moderate extent ☐

c) Less extent ☐

d) No impact ☐

Q9. Overall, how would you rate your ability to search for information?

a) excellent ☐

b) good ☐

c) average ☐

d) poor ☐

Q10. Are you able to check the accuracy of information?

☐

a) Yes

b) No ☐

PART C: INFORMATION COMPETENCY

Q11. How would you decide if a book contains information on your topic?

a) The title includes the words of your topic ☐

b) checking if the table of contents of a book lists a chapter on your topic ☐

c) Find the book and see that your topic is listed in index ☐

d) All the above ☐

Q12. In case of finding a research article which tool will you prefer?

a) Library catalogue ☐

b) Newspaper ☐

c) Journals ☐

d) Don't know ☐

e) Other (Please, specify) …………………………………………

Q13. In order to find more documents on your topic you can include synonyms in a search statement. To connect those synonyms in your statement, which one of the following BOOLEN operators would you use?

a) AND ☐

b) NOT ☐

c) OR ☐

d) Other (please, specify) ……………….......................................

Q14. In order to know a subject, which one would you consult first:

a) Journal ☐

b) An encyclopaedia ☐

☐

c) Online database

d) Book ☐

e) Don't know ☐

   f) Other (please, specify…………………………………………

Q15. You have found a book that is right on your topic. Which sections of the book will you consult to find other documents on the topic?

   a) The glossary ☐

   b) The index ☐

   c) The references ☐

   d) The table of contents ☐

   e) Don't know ☐

   d) Other (please, specify) …………………………………………………….

Q16. To find all the documents about Dr. A. Akakandelwa in the library catalogue, you would do a search:

   a) By title ☐

   b) By publisher ☐

   c) By author ☐

   d) Other (please, specify) …………………………………………………

 Q17. How do you check the accuracy of information you have acquired from a book?

   a) Checking the references ☐

   b) Checking the credibility of the publishers ☐

   c) Checking the credibility of the author ☐

   d) all the above ☐

   e) Don't know ☐

PART D: STUDENTS INFORMATION SEARCH STRATEGIES

Q18. How often do you search for information?

a) Very often ☐

b) Often ☐

c) Rarely ☐

d) Never ☐

Q19. Which of the following search strategies are you familiar with? Tick as many as apply

a) String searching ☐

b) Truncation (Use asterisk* mark to retrieve documents containing variations on a search term) ☐

c) Proximity operator (use of operators like NEAR and FBY (FOLLOWED BY) ☐

d) Boolean operator (search term with AND, OR, NOT operators) ☐

e) Known searching (search using the name of a website, or a specific source title or citation links) ☐

f) Open ended (Keyword search, using search engines like Google etc) ☐

g) Phrase searching (terms enclosed by quotation marks) ☐

Q20. In your opinion, what are the benefit (s) of using search strategies when searching for information?

………………………………………………………………………….

…………………………………………………………………………..

Q21. What is the consequence (s) of not using search strategies in information search?

…………………………………………………………………………..

……………………………………………………………………………

PART E: STUDENTS AREAS OF STRENGHTH AND WEAKNESS IN INFORMATION LITERACY SKILLS

Q22. Do you encounter any problems in applying or practicing any of the information literacy skills?

a) Yes ☐

b) No ☐

Q23. If **yes** to the above question, specify those skill(s) in which you have problems from the list provided. Tick as many as apply

      a) Identify when information is needed ☐

      b) Evaluating the information retrieved ☐

      c) Analysing the information ☐

      d) Presenting the information ☐

      e) Organizing of the information ☐

      f) Others, specify…………

Q24. In which way do you think lack of information literacy skills affect students affect academic performance?

……………………………………………………………………………………………

……………………………………………………………………………………………

Q25. What is your recommendation for improving information literacy skills for students?

……………………………………………………………………………………………

……………………………………………………………………………………………

Thank you for your co-operation

APPENDIX 2

SPSS-variable view

SPSS-data view

APPENDIX 3

BUDGET

ACTIVITY	DESCRIPTION	QUANTITY	AMOUNT	TOTAL IN KWACHA
Printing of Questionnaire	Printing of questionnaires	80 copies	K6 per copy	K480
Printing and Binding of final proposal	Printing of the research final proposal and binding before submission	1 copy	K37.00	K 37.00
Printing and Binding of final report	Printing and binding of the final report before its submission	1 copy	K65.00	K 65.00
Sub-total				**K 582.00**

APPENDIX 4
WORK PLAN

ACTIVITY	DESCRIPTION	DURATION
Literature Review	Reviewing of documents and other secondary materials relevant to the research topic (information literacy)	**2 days** **1st 2019 to 2th April 2019**
Proposal writing: *Chapter one*	Writing of chapter, one begins	**25 days** **3rd April 2019 to 26th April 2019**

Submission of chapter one	Submission of research proposal chapter one for marking and making corrections	**1 day** **26 April 2019**
Proposal writing *Chapter two*	Writing of chapter two (literature review) begins	**19 days** **27th April to 16th May 2019**
Submission of chapter two	Submission of research proposal chapter two for marking and making corrections	**1 day** **17th May 2019**
Proposal writing *Chapter three*	Writing of chapter two (Methodology) begins	**9 days** **18th May 2019 to 28th May 2019**
Submission *of chapter three and data collection tool*	Submission of chapter three and data collection tool for marking and making corrections	**1 day** **31th May 2019**
Preparation of data collection tool	Preparation of the questionnaire to be used in the process of data collection	**2 days** **29th May to 30st May 2019**
Submission of the full research proposal	Final submission of the full research proposal	**1 day** **7th June 2019**
Data Collection	Going into the field and getting data from the students by administering questionnaires	**8 day** **19st August 2019 to 26th August 2019**

SPSS data entry	Entering of data collected from the field into SPSS software	**5 days** **27th August 2019 to 1th September 2019**
	Analysis of the data collected from the field using various data analysis tools	**2weeks** **2nd September 2019 to 16th September 2019**
Report Writing *Chapter four*	Presenting and writing the findings from the field in the report	**2 weeks** **17th September to 26th September 2019**
Submission of chapter four	Submission of chapter four for marking and corrections	**1 day** **27th September 2019**
Report writing chapter five	Writing of the discussion of findings, and conclusion and recommendation	**20 days** **28st September 2019 to 21st October 2019**
	Submission of chapter five for marking and making corrections	**1 day** **22nd October 2019**
Submission of the Report	Final Submission of full research report	**1 day** **1th November 2019**