

**THE UNIVERSITY OF ZAMBIA**

**SCHOOL OF EDUCATION**

**DEPARTMENT OF LIBRARY AND INFORMATION SCIENCE**

**TOPIC**

**AN INVESTIGATION OF ICT USE AND ITS IMPACT ON THE LEARNING PROCESS  
AMONG LIS STUDENTS: A CASE STUDY OF THE UNIVERSITY OF ZAMBIA  
DEPARTMENT OF LIBRARY AND INFORMATION SCIENCE**

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## **DEDICATION**

I dedicate this project to my family and friends for their immense support and encouragement during the entire period of my study.

## **ACKNOWLEDGMENT**

First and foremost, I am grateful to the almighty God for giving me the wisdom, knowledge and life to pursue my studies successfully

I want to express my gratitude to my supervisors Mr. Benson Njobvu, who offered encouragement, criticisms, challenges and insight that made the study successful.

I also extend my appreciation to the respondents who participated in this study for their kind assistance without which this study would not have been successful.

## **ABSTRACT**

The study investigated the use of ICT and its impact on the learning and teaching process among students at the university of Zambia department of library and information science. The study findings indicate that most respondents used computers and had competent skills and knowledge in various ICT tasks and skills. The other key finding were teaching using ICTs made learning efficient and there are adequate ICT tools to improve learning at the university of Zambia. More so, some challenges faced by lecturers were slow internet, lack of computer maintenance, lack of equipment and lack of training, while students experienced slow internet connectivity, lack of use of ICTs by lecturers at their disposal and computer crashing. Generally, there is need to improve the use of Moodle, Dspace, OPAC among student, have adequate up to date computers that are regularly maintained and provide professional development programs to equip lecturers in their specialized field.

**KEYWORDS:** ICT, teaching and learning, ICT impact, LIS.

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# **CHAPTER ONE**

## **INTRODUCTION**

### **1.0 OVERVIEW**

This chapter sets the scene for this research and is divided into seven sections, these include; the background of the study, the statement of the problem, research objectives, more so, give significance of the study, ethical issues, definitions of key terms and a summary of the whole chapter will be drawn

### **1.2 BACKGROUND**

ICT is an acronym which stands for Information and Communication Technologies. This is referred to the technologies both hardware and software, that enable humans to communicate with one another. Information and communication technologies is defined as a diverse set of technological tools and resources to transmit, store, and create, share or exchange information. These technological tools and resources include computers, the internet (websites, blogs and emails), live broadcasting (radio, television, webcasting), network hardware, computer and software systems, (UIS, 2009: 120, Valacich and Schneider, 2012 and Quinn, 2003).

During the past decades there has been an exponential growth in the use of information and communication technologies which has made pervasive impacts both on society and our daily lives. It is thus, not surprising to find increasing interests, attention and investments being put into the use of ICT in education all over the world. Zambia like any other country has embraced the use and integration of ICT in the delivery of Education. The use of ICT in learning is becoming inevitable in educational institutions globally.

Education has been key to Zambia development process since the country attained its independence in 1964. The ministry of General Education has been directing a lot of resources and expertise into establishing effective systems and policies that will have positive impact on students and learning outcomes (Mwango, 2018).

The Zambian government recognizes the strategic role ICT can play in improving the quality of education. This is evident from the Ministry of Education's ICT policy on education whose vision

is “to contribute towards reaching innovative and lifelong education and training through provision of ICT infrastructure to education institutions, content development, curriculum integration, teacher training, distance education, administration and support services as well as finance (Ministry of Education, 2007).” The government through, the Ministry, has embarked on several initiatives in collaboration with various partners, aimed at promoting the use of ICT in schools such as the Computers for Zambia Schools Trust, SchoolNet, UNESCO Distance Learning Telecentres, eBrain Forum and One World Africa. While much has been done to encourage the use of ICT in education in Zambia, it is still unclear what impact this has had on education and what benefits this has brought to teaching, school administration and particularly learning (Mtanga, 2012).

Furthermore, the use of ICT in the learning process by university students represents for them a key competency in order to better adapt to constantly progressing society and to develop skills that meet the needs of the 21st century. Additionally, ICT stimulates their interest and encourage them to adopt a new mode of acquisition of knowledge and skills to improve their cognitive capacities, developing their learning, collaboration and sharing (Oulmaati, 2017).

Studies have shown ICT helps students augment their knowledge skills as well as to improve their learning skills. More so, availability and usage of ICT improves learning skills of students. The impact of ICT on the learning process therefore, motivates and employs learner’s interests. Today, everything required for reading, looking up, studying, training, revising, arranging and informing, saving and navigating are available at a click of a mouse.

More so, there is evidence of the increase in the integration of ICT into the LIS curricula, courses in computer literacy, ICT, hardware and software, databases, and web design. Many research has been done on utilization of ICT among students but the main focus of this research is to find the impact that the use of ICT has on the learning process by LIS students specifically.

### **1.3 CONTEXTUAL BACKGROUND**

The University of Zambia (UNZA) was established by Act of parliament No. 66 of 1965. The first intake of students took place on 17<sup>th</sup> march 1966. The motto of the university, SERVICE AND EXCELLENCE has guided the development of the university since its inception.



UNZA is situated in Lusaka on two campuses. The main campus is the Great East Road Campus catering for the medical school. It is situated on John Mbita Road, 4km South East of Lusaka, opposite the University Teaching Hospital.

The School of Education is one of the thirteen (13) schools of the University of Zambia. Currently, the School is the biggest in the University with nine academic departments.

The School of Education was opened in April 1966 with forty-two graduates who were following a programme leading to the University of London's post-graduate certificate in education.

In 1968, the first phase of physical facilities of the School was completed and occupied at the western end of the Main University Campus in Lusaka. In 1969, the School offered undergraduate courses forming part of the B.A. and B.Sc. with Education degrees as well as post-graduate programmes leading to the Masters of Education degree, an Associate Certificate in Education for primary school teachers, and both undergraduate and pre-graduate courses in Library studies.

#### **1.4 STATEMENT OF THE PROBLEM**

While theory is important, it must be married with practice. Effective learning can only take place with adequate facilities and an enabling environment, however the LIS institutions in Zambia, are hampered by the lack of facilities and faces practical training pitfalls. Despite the introduction of ICT courses in most LIS institutions in Zambia, observation revealed that all these schools lack information technology laboratories. For instance, LIS students at the University of Zambia share a computer laboratory with students from the department of computer science, the laboratory is not fully equipped and cannot accommodate all students in one setting unless grouped into various streams. Edegbo (2011), observed that most LIS institutes teach ICT at a theoretical level as they do not have adequate required quantity and quality of computer equipment.

In order to better approach the problematic aspect of ICT use among students in higher education, we rely on the assumption that ICT can have a positive impact on the learning process of students provided that they are used prudently and up-to-date ICT equipment are available. Hence the interest of this study which is aimed at investigating the use of ICT among university students enrolled in Library and Information Science, mainly focusing on two factors; ICT use and accessibility, the context and use are essential for the impact of ICT on learning.

## **1.5 RESEARCH OBJECTIVES**

### ***1.4.0 GENERAL OBJECTIVES***

To investigate how the use of ICT impacts on the learning process among LIS students: a case study of University of Zambia.

### ***1.4.1 SPECIFIC OBJECTIVES***

- 1 To identify the ICT tools put in place to improve learning at the University of Zambia.
- 2 To evaluate whether the use of ICT enhances students learning.
- 3 To examine how knowledgeable lectures and students are towards the use of ICT.
- 4 To investigate the challenges of ICT in teaching and learning
- 5 To assess the benefits of ICT in teaching and learning at the university of Zambia.

### ***1.4.2 RESEARCH QUESTIONS***

1. What ICT tools have been implemented to improve learning at the University of Zambia.?
2. How has the use of ICT enhanced teaching and learning?
3. How knowledgeable are lecturers and students towards the use of ICTs?
4. What challenges do lecturers and students face with the use of ICTs in teaching and learning?
5. How have students and lecturers benefited from the use of ICTs in teaching and learning?

## **1.5 PURPOSE OF THE STUDY**

The significance of the research lies in its attempt to investigate how the use of ICT that is computers and laptops have impacted on the learning process among Library and Information Science students at a higher learning institution like the University of Zambia. It hopes to find solutions if the impact is negative. And if positive, it hopes to find more efficient ways to enhance the learning process of LIS students. These are the main handlers of information, thus, to equip them, it is important that they are exposed to ICT tools. The researcher also hopes that this work will be a good beginning that may lead to further empirical studies and consequently fill the gap in this area of research. The research will be very beneficial to Lis students and lecturers in the sense that, they will be more knowledgeable about how vital the use of ICT is in their learning process and how well it prepares them to be incorporated into the technical world.

## **1.6 ETHICS**

Confidentiality of the responses will be retained strictly to ensure privacy of their data. The disclosure of respondent's identity will not be revealed. More so, the use of secondary data from any sources will be acknowledged with appropriate references.

## **1.7 LIMITATIONS OF THE STUDY**

The study anticipates the following limitations;

1. Logistics on the impact of ICT in learning is a complex process.
2. The selected populace may not be honest in answering questions.
3. Impact research results are not static, especially in the fast moving area of ICT, is seen as subject to change over time.

## **1.8 DEFINITION OF KEY TERMS**

This study will focus on the following key terms; **ICT, use of ICT, Impact, LIS** and **students**. **ICT** is a short hand term for Information and Communication technologies, this refers to technologies that provide access to information through telecommunications, its primary focus is on communication technologies such as internet, wireless networks, cell phones and other communication medium.

**Impact:** in this research will mean the marked effect or influence ICT use has on the learning process.

**LIS:** is the acronym for library and information science, therefore LIS students are people enrolled into a multidisciplinary field that applies the practices, perspectives and tools of management, information technology, education and other areas of libraries and is responsible for the collection, organization, preservation and dissemination of information resources.

**Use of ICT:** we can deduce that the social uses of a product, an instrument, or even an object in order to highlight the complex cultural meaning of daily life behavior (Proulx, 2005).

## **1.9 SUMMARY**

In a nutshell the chapter looked at the background of the study, this is followed by the research objectives, research questions, significance of the study, ethics and definition of key terms.

## CHAPTER TWO

### LITERATURE REVIEW

#### 2.0 INTRODUCTION

The purpose of this research is to elucidate the impact of ICT on the learning process among LIS students of UNZA. To achieve this goal, this chapter of the study has been designed to deal with examination of existing literature in relation to the research study. Available literature has been reviewed from two perspectives; the theoretical framework of the study, supported with the empirical basis upon which the study will be carried out.

#### 2.1 THEORETICAL PERSPECTIVES OF ICT IN EDUCATION

Mastering ICT skills and utilizing ICT towards creating an improved teaching and learning environment is imperative and this has brought about a new learning culture and thriller in the academia. Currently, the use of ICT in education does not conclusively demonstrate significant effects on learning. Nevertheless, not all ICT usage models are designed to affect student outcomes. Therefore, to accurately study the impact of ICT, the concept of an educational programme supported by ICT must first be defined. Rodríguez *et al* (2013) proposed the ICT for Education (ICT4E) programme, an evidenced-based framework to determine a model's ability to produce improvements before having to evaluate its results.

Following the resounding evidence of inadequate theoretical frameworks of ICT on education, for the purposes of this research, the ICT4E theoretical model will be used to investigate the impact of ICT on library and information students at UNZA. The framework has four components: implementation, intervention, transference and total cost.

Foremost, it must be appreciated that Information and communication technologies (ICT) were introduced in schools to transform teaching and learning processes and to improve strategies for better educational attainment (Culp, Honey, & Mandinach, 2003; Kozma, 2003; Sunkel, 2006).

By definition the ICT4C model is an educational programme which integrates the use of a specific technology-enhanced instructional design or Technology-Enhanced Learning (TEL) environment into teaching and learning practices. Such TEL environments should modify teaching and learning process in ways that could not be achieved without ICT support. Thus, the model will be referred

to as the use and integration of the TEL in the teaching/learning process the pedagogic model (Rodríguez *et al*, 2013)

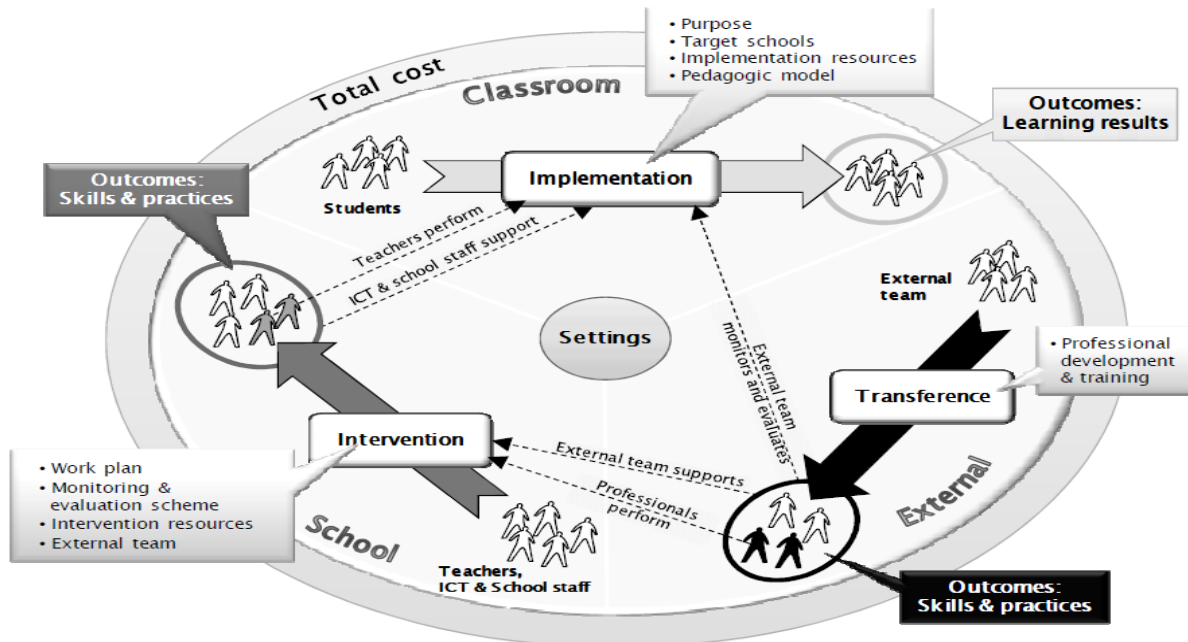
Now specifically, the ICT4E model as a theoretical framework does identify the processes and the relationship between them in the integration of the pedagogic model in a school. To annotate this further, four attributes have been assigned to each process: setting, time, aim and outcomes. Setting refers to where the process operates (i.e., classroom, school or external), while time refers to its duration.

The third attribute is the main aim of the process, which can be classified as one of the following:

1. Implementation: the use of the pedagogic model by the institution team.
2. Intervention: the development of skills and practices in institution staff. This is normally done by an external team which carries out training, ensuring the gradual adoption of the pedagogic model and accuracy of its implementation, using a monitoring and evaluation scheme.
3. Transference: the professional development of the external team so that the intervention can be accurately carried out on massive scale.

It assumed that when all of the above aspects are well-fitted into the learning, the ICT4E has to yield impact on both the learners and the teacher.

With the foregone aspects postulated, the following infographic does provide details of the ICT4E model.



**Figure 0.1 ICT4E Theoretical Framework**

Source: Rodríguez et al (2013)

In Figure 1, the block arrows represent the three processes from the ICT4E programme in its corresponding setting, producing outcomes once each one has been carried out: learning results in students and the respective skills and practices in the ICT and school staff and the external team.

Figure 1 also outlines the relations between the main roles of the ICT4E model’s three processes: firstly, the teachers perform the implementation. Secondly, members of the external team and the ICT and school staff support each other mutually as they carry out the intervention, while the external team finally monitors and evaluates the implementation.

The ICT4E is very ideal for this study being proposed because ICT’s impact on student’s learning will be investigated appropriately and integrated learning with ICT in LISE as a process will also be studied. Furthermore, the ICT4E has a direct connotation on the students as learners and teachers for knowledge impartation; and as process, lecturers (teachers) will be key informants and the entire leaning setting, secondary data will be collected from the school of education (LISE) and external evaluation reports.

## **2.1 EMPIRICAL REVIEW**

This section is an elucidation of the related evidence in the body of knowledge consulted. A number of studies have been reviewed from a global to a local perspective, as well from general to specific aspects.

### **2.2.1 Needs and Usage of ICTS**

Students need ICTS in their education for a number of academic reasons like research, preparing for assignments and exams and generally to improve the standard of education. Becta (2003) explicated that research into the use of ICT in teaching and learning is impartially unswerving in finding that ICT aids in improving writing and reading skills, supports collaboration and develop speaking and listening skills. In the light of the foregone, Becker, et al (1999) conducted a study in selected senior High Schools in the Tema Metropolis in Ghana and it was revealed that those who used ICT facility attested to the fact that Internet and computers had helped them to achieve new things which they could not have done. In a related study by Condie and Munro (2007) done in India, on the use of ICTs in teaching and learning ,they found that the use of ICTs had positive effects in a number of subjects, as well as being constructive in assisting students that are marginalized as a result of personal issues.

In a survey by Mtanga et al (2012) on the use of ICT in education in urban schools in Zambia showed that there could be various contributing factors to this disparity, especially that a third of the learners stated that they rarely utilized ICT facilities in their school. Among other rationales, the foregone finding was owed to inadequate facilities and terms of accessibility of ICTs tools in the schools as well as low ICT competencies in learners and teachers.

Siyomunji and Hamooya comparative study on the usage of Information, Communication Technologies in the Delivery of Quality Education between Hillcrest National School and David Livingstone Secondary Schools in Livingstone showed that the use of ICTs at Hillcrest was better than David Livingstone. The finding was attributed to the majority of the learners at Hillcrest used computers because they were adequate as compared to David Livingstone which had very few computers.

### **2.2.2 ICT enhancing learning and teaching process**

ICT have the potential to accelerate, enrich, and deepen skills to motivate and engage students to help relate school experience to work practices as well as strengthening teaching and helping schools change (Davies and Teale, 1999). According to Zhao and Cziko (2001), three conditions are necessary for teachers to introduce ICT into their classrooms; teachers should believe in the effectiveness of the technology, that they have control over the technology and that the use of the technology will not cause any disturbance. However research studies show that most teachers do not make use of the potential of ICT to contribute to the quality of learning environments, although they value this potential quite significantly (Smeets, 2005).

The use of ICT in educational settings, by itself acts as catalyst for change in the domain, ICT by nature are tools that encourage and support independent learning purposes become immersed in the process of learning, therefore students become more immersed in the process of learning and the more students use computers as information sources and cognitive tool, the influence of the technology on supporting how students learning will continue to increase (Reeves and Jonassen, 1996). Hepp, Laval and Rehbein (2004) state that the literature contains many unstainable claims about revolutionary potential of ICTs to improve the quality of education. They also note some claims are now deferred to a near future when hardware will be presumably more affordable and software will become, at last, an effective learning tool.

Harris (2002), conducted cases studies in three primary and three secondary schools, which focused on innovative pedagogical practice involving ICT. He concluded that the benefits of ICT will be gained 'when confident teachers are willing to explore new opportunities for changing their classroom practices by using ICT.

Rockman and Chessler, (2000) found in their studies that students' computer literacy improves their academic achievements and positive attitudes in learning. Research studies further indicate that learners participate more actively when ICT is used in learning. However, some students may become frustrated when they perceive that their ICT skills are being under-estimated and under-utilized, Becta (2002).



### **2.2.3 Students' knowledge and use of ICT**

In recent years many scholars have written on the need for ICT knowledge and skill among librarians and information scientist. To successfully exploit ICT for full benefits, Marmwin (1998) in his study "Facing the challenge: Technology training in libraries," observed that information professionals must develop knowledge or expertise in an established programme of knowledge cultivate the technical capability and subject knowledge. The basic knowledge of computers is how it functions, imputing and retrieval of information from it, ability to choose appropriate software, ability to capture and use ICT based resources (Ikpahindi, 1990).

Woreta et al (2013) in his study revealed half of the students had ICT knowledge which is similar to the study carried out in medical school of Ahmadu Bello University, Zaria, Nigeria and a bit lower than the study conducted in India (Gour and Srivastava, 2010). Despite the introduction of IT into the curriculum of preparatory school and in universities, the level of computer literacy among CMHS students was very low. This was due to poor access to computers among students or the inadequacy of the IT course provided in the university (Olatoye, 2009).

More so, a study by Abubakar (2010) on ICT knowledge and skills among students of library and information science in Umaru Musa Yar'adu University, Nigeria, showed that the department had adequate courses with ICT components and also had adequate ICT infrastructures. The study further revealed that students of the department did not have significant knowledge and skills on search engines, computer applications using and cataloging e-resources as well as media resources.

### **2.2.4 ICT tools to improve learning**

Learning institutions use different set of ICT tools to communicate, create, disseminate, store and manage information. The use of ICT has also become integral to the teaching-learning interaction through such approaches as replacing chalkboards with interactive whiteboards, using smartphone, computers or laptops or other devices used for learning during class time, and the flipped classroom model where students watch lectures at home on the computer and use classroom time for interaction.

Fisher, Higgins, and Loveless, (2006) carried out a study to find out the impact of ICT implementation after a project known as Multimedia Portable for Teachers Pilot (MPTP) was conducted by the University of Nottingham School of Education 1998. A total of 1150 teachers in 575 primary and secondary schools in the United Kingdom took part. During the project, teachers

were trained with ICT skills on manipulating their school computers and also how to pedagogically use the Internet in the teaching and learning process. The main aim of the programme was to increase teachers' confidence and competence in using ICT pedagogically. According to Fisher, Higgins, and Loveless, (2006) studies, after the MPTP project, 98% of teachers who participated in the project made effective use of ICT in the teaching and the learning process

Shan Fu (2013) asserts that ICT is considered a powerful tool for educational change and reform. A number of previous studies have shown that an appropriate use of ICT tools can raise educational quality and connect learning to real life situations (Lowther et al, 2008; Weert and Tanell, 2005). As Weert and Tanell (2005) pointed out, learning is an ongoing lifelong activity where learners change their expectations by seeking knowledge, which departs from traditional approaches.

### **2.2.5 Benefits of Application of ICT in learning institutions**

The use of technology in the learning environment has become an unrelenting force in recent years. In due cognizance to Volman and Eck (2005), Schools in the western world invested a lot in the ICTs infrastructure over the last 20years, and students used computers more often and for a larger range of applications. The studies reviewed those teachers who use ICTs facilities mostly show higher teaching gains than those who do not use. Kulik's (1994) finding across 75 studies in the United States showed the following: teachers who used computer tutorials in mathematics, natural sciences and social sciences scored significantly higher on their student's exam results subjects. Teachers who use simulation software in science also produced higher results.

Volman and Eck (2005) postulated that the belief that the use of ICTs in education contributes to a more constructivists learning and an increase activity and better responsibility of students. Diaz's study in Wales exuded that teachers made significant progress where schools rated ICTs use and its perceived impact as significant or substantial. One component of the report found out that ICT use led to increased commitments to the teaching task, enhanced enjoyment and interest in teaching, an enhanced sense of achievement in teaching.

### **2.2.6 Challenges in the usage of ICTS in learning institutions**

A study by the Organization for Economic Cooperation and Development (OECD), (2009), involving 14 countries, confirmed that there were a number of challenges inhibiting the use of ICTs in education. These challenges included an inconsistent number of computers to students, a deficit in maintenance and technical assistance and finally, a lack of computer skills and or

knowledge among teachers, lack of confidence, accessibility, and lack of time, fear of change, poor appreciation of benefits of ICTs and the age.

Frederick and Manion (2006), in his study on challenges associated with ICT use in Nigerian schools showed that student mobility, special needs, and anxiety over standardized test results are the main challenges associated with ICT use. Whelan (2008) in his study revealed that more barriers from the student perspective in Egypt's school include, subpar technical skills that reduce access to ICT in classroom, an insufficient number of academic advisors and lack of timely feedback from instructors, reduced interaction with peers and instructors and lastly lack of ICT equipment to use. Additionally, Baylor and Williams (2002), in an examination of a number of American public schools, discovered that teacher related issues were crucial in determining ICTs use in the classroom. Castrol & Law (2011) 'Teachers' Attitudes towards Information and Communication Technologies: The Case of Syrian EFL Teachers', *Computers and Education*, 47 (4) 373-398., while Baskins and Williams, (2006) indicated that substantial body of research identifies time constraints as an important challenge to the use of ICTs in teaching.

Becta (2004) in particular, found that teachers who failed to fully use technology were often restrained by lack of time. Among the major concerns expressed by teachers were the time needed to: locate internet advice, prepare lessons, explore and practice using the technology, deal with technical issues and receive adequate training. On the other hand, Castro and Law (2011) asserted that teacher competence refers primarily to the ability to integrate ICTs into pedagogical practice. Pelgrum (2001) found that lack of knowledge/competence in technology, among teachers in developing nations was the primary obstacle so the uptake of ICTs in education. In relation to the lack of knowledge is the lack of training opportunities among teachers. One finding from Pelgrum's (2001) study was that there were not enough training opportunities for teachers in the use of ICTs in the classroom. UNESCO (2004) also added that, the effective use of ICTs would require the availability of equipment, supplies of computers and other proper maintenance including other accessories.

### **2.3 SUMMARY**

The studies reviewed have elucidated that ICT use in education and in the learning process has become very fundamental to learners and academicians. Specific variables reviewed are:

- i. The use of ICT is more on teachers than learners

- ii. Usage of ICT by learners is motivated by the availability of ICT tools or equipment
- iii. Usage of ICT by learners is mostly explained by the levels of competencies in the learners

On Impact of ICT, most studies have revealed that it is more on the delivery of learning material as opposed to the uptake.

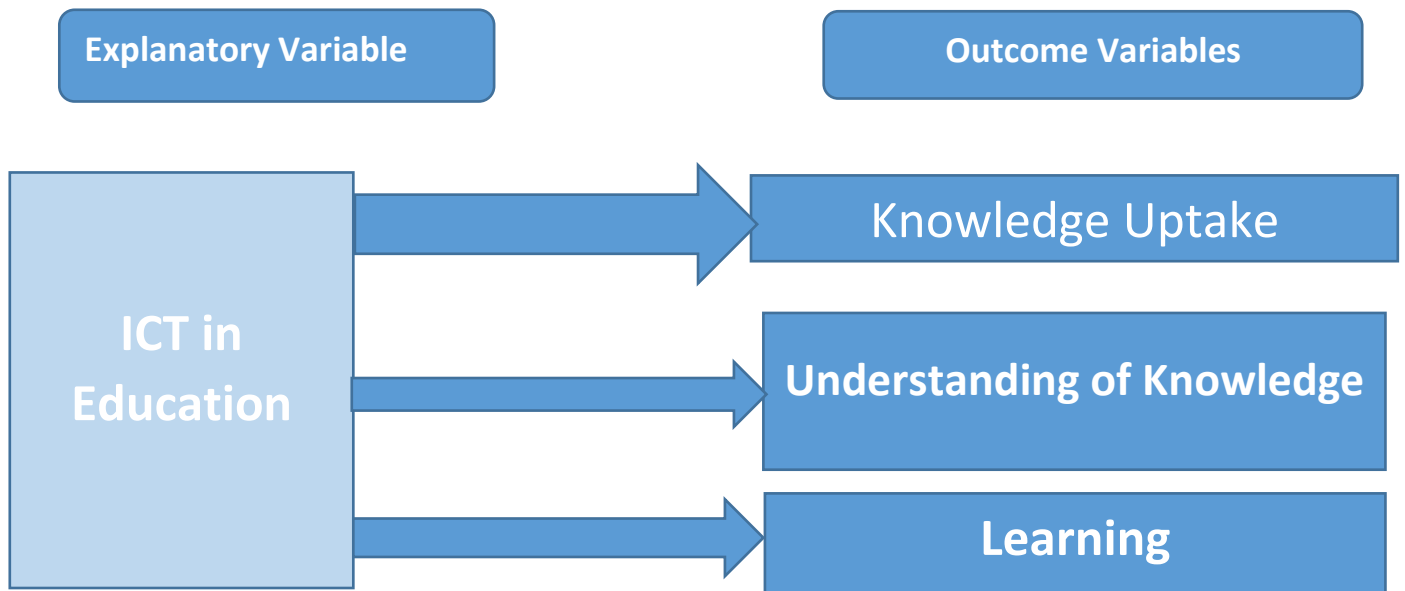
### **2.3.1 Gaps Identified in the Literature Reviewed:**

Most studies are descriptive as oppose to correlational. In the body of knowledge consulted, most of the studies reviewed, the methods were more on the descriptive and less correlational, especially as this relates to determining the effect or impact of ICT on learners. Deterministic approaches could have lucidly provided evidence on the essence of ICT on knowledge and understanding of learners. Therefore, this study being proposed is correlational in nature and the researcher would endeavor to ascertain the effect or impact of ICT on LIS fourth year students at UNZA.

### **2.4 CONCEPTUAL FRAMEWORK**

Most studies are descriptive as oppose to correlational. In the body of knowledge consulted, most of the studies reviewed, the methods were more on the descriptive and less correlational, especially as this relates to determining the effect or impact of ICT on learners. Deterministic approaches could have lucidly provided evidence on the essence of ICT on knowledge and understanding of learners. Therefore, this study being proposed is correlational in nature and the researcher would endeavor to ascertain the effect or impact of ICT on LIS fourth year students at UNZA.

With due cognizance to the ICT4E by Rodríguez et al (2013), the following conceptual framework has been developed for this research being proposed.



**Source: Emily 2019**

## **CHAPTER THREE**

### **RESEARCH METHODOLOGY**

#### **3.0 INTRODUCTION**

According to Collis and Hussey (2003, P.55), research methodology has been defined as the overall approaches and perspectives to the research process as a whole and is concerned with explaining the following main issues: What data the researcher collects, why the researcher collects that particular set of data, how the data will be collected and how the data will be analyzed. Hence, this chapter will include the facets which have been stated in the preceding sentence.

#### **3.1 RESEARCH DESIGN**

According to (Saunders, M., Lewis, P and Thornhill, A., 2009), the research design section gives an overall view of the method chosen and the reason for that choice. In this study, descriptive study design will be used. The major of descriptive research is description of the state affairs as it exists. The researcher reports the findings. Kerlinger (1969) points out that descriptive studies are not only restricted to fact findings, but may often result in the formulation of important principles of knowledge and solutions to significant problems. They are more than just a collection of data. Conducting a descriptive study will familiarize the researcher with the problem, describe the actual prevailing situation use of ICT and its impacts on the learning process among LIS students at UNZA. Suffices to underscore here that the study will be correlational in its approaches as this does necessitate measuring of outcome variable as affected by the variable being investigated.

#### **3.2 LOCATION OF THE STUDY**

The study will be carried out in Lusaka, Zambia at UNZA in the school of education.

#### **3.3 TARGET POPULATION**

The target population comprises all fourth-year LIS students who have had ICT integrated in their learning process since their first year and lecturers. The university has an estimated total of 16 lecturers and an estimated total of 150 students enrolled into the library and information programme from their first year. Students were the true representative population while lecturers also formed part of the study because of their role in the learning and teaching process at the university.

#### **3.4 SAMPLING DESIGN**

The sampling design to be used is probabilistic sampling.

### 3.4.1 Probability Sampling

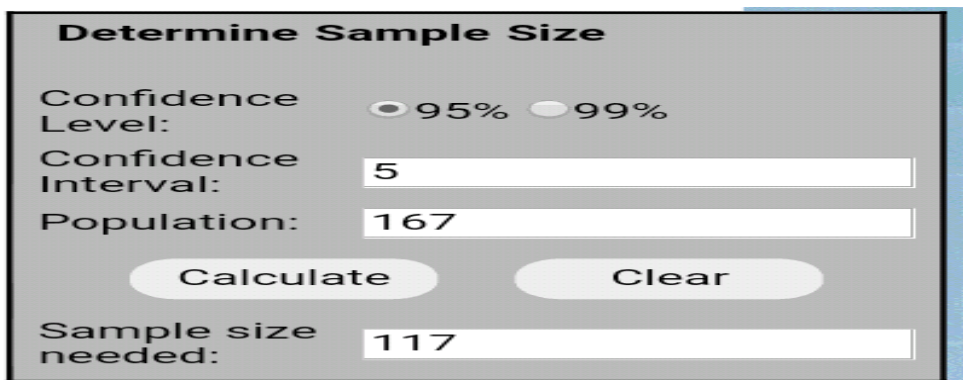
Probability Sampling is a sampling technique in which a sample from a larger population are chosen using a method based on the theory of probability. For a participant to be considered as a probability sample, he/she must be selected using a random selection (Bhat, 2019). The most important requirement of probability sampling is that everyone in the targeted population has a known and an equal chance of getting selected. Furthermore, probability sampling applies statistical theory to select randomly, a sample from an existing large population and then predict that all their responses together will match the overall population. This is so because a sample size determined by the probabilistically is very representative.

### 3.4.2 Sampling Technique

The sampling technique to be used in this study is a simple random method. A simple random sample is a fair sampling technique especially that the main attribute of this sampling method being every subject or person has the same probability of being chosen. Therefore, from a total population of 166 fourth-year students and lecturers, this researcher is determined to select a sample size (or the unit of analysis) that will be a representative of the population.

### 3.4.3 Sample Size

To determine the sample size for this research, a sample size software calculator has been used, and this is shown below.



**Determine Sample Size**

Confidence Level:  95%  99%

Confidence Interval:

Population:

Sample size needed:

**Source:** The Survey Systems, 2019

With the confidence interval of 5% (this is the error margin) and the confidence level of 95%, the unit of analysis (sample size) determined for the study is a total of 117 students (105) and lecturers

(12). In drawing this sample from the sampling frame, a random number generator will be used to generate random numbers to ease the selection process.

### **3.5 RESEARCH TOOLS**

A research tool is referred to as an instrument in the hands of researchers to measure what the indent in their field of study (Lemba, 2011). The tools of data collection that will be used during the process of collecting data are primary data collection tools through questionnaires, and interview guides. The questionnaires shall consist of questions that enveloped all the intended aspects of fourth-year students and their experience with ICT use in their learning process from first year. In addition, the closed ended questions will be used in order to avoid differences in interpretation.

### **3.6 DATA COLLECTION TECHNIQUES**

Considering that the research will be dealing with a population that is literate, a self-administered questionnaire comprising of closed-ended questions will be used. However, for clarification of some variables in the questionnaire, the researcher shall use interview as method of data collection. On the part of the interview method, questions will not be phrased and asked to suit the researcher's opinion or thus they will be value judgement free so as to have good quality of data collected. The self-administered questionnaire will be convenient to the respondent and the researcher. The respondents will be free to answer at their convenient time and in an anonymous way, thus ensuring honesty of the responses given.

The questionnaires will be distributed to the respondents by the researcher. After respondents had given their responses, the researcher shall go back to collect the questionnaires.

### **3.7 DATA PROCESSING, ANALYSIS AND INTERPRETATION**

The analysis and interpretation of data will be done with the help of some computer software and statistical tools. The data collected from the questionnaire will be checked or edited for uniformity, consistency and accuracy. Questions will be coded for ease of data analysis. The data entry will be done using Epidata because Epidata is error free in terms of entering of data and then data will be exported to SPSS and Stata for analysis since entering directly is prone to errors in these statistical packages. The merits of using SPSS for data analysis are as follows:

- ✓ It is user friendly.



- ✓ It has enough space for a wide range of numbers.
- ✓ Mathematical manipulation can be easily dealt with through its inbuilt functions.
- ✓ Much of the analysis can be done at once using few commands and having results of high quality which saves time.

## CHAPTER FOUR

### PRESENTATION OF FINDINGS

#### 4.0 OVERVIEW

This research was conducted by questionnaire and investigated the impact of ICTs use among library and information students and lectures in learning and teaching. A total number of 105 questionnaires were distributed to students and twelve (12) were distributed to lecturers. Out of the sample size of 117, the research conducted produced a successful turn out rate of 86.3%, which added up to 101 in total. Out of this total 58 (57.4%) respondents were female and 43 (42.6%). Of which (94) were students and (7) were lecturers. Unfortunately 16 questionnaires did not receive any response, which gave a response deficit of 13.7%. Some of the challenges faced in this research were the right time to distribute the questionnaires to both students and lecturers. Some were too busy, some took a lot of time to respond to the questionnaire which took almost a week. Thus, it all comes back to the right timing because lecturers had other duties to attend to, or were out of town. While students had classes to attend to as well as other school related work to finish. Finances were also another challenge as my project allowance was omitted. The data collected will be presented in graphs, bar charts and histograms and a narration of each objective will be done.

#### 4.2 PROFILE OF RESPONDENTS

##### 4.1.1 Demographic information of the student respondent

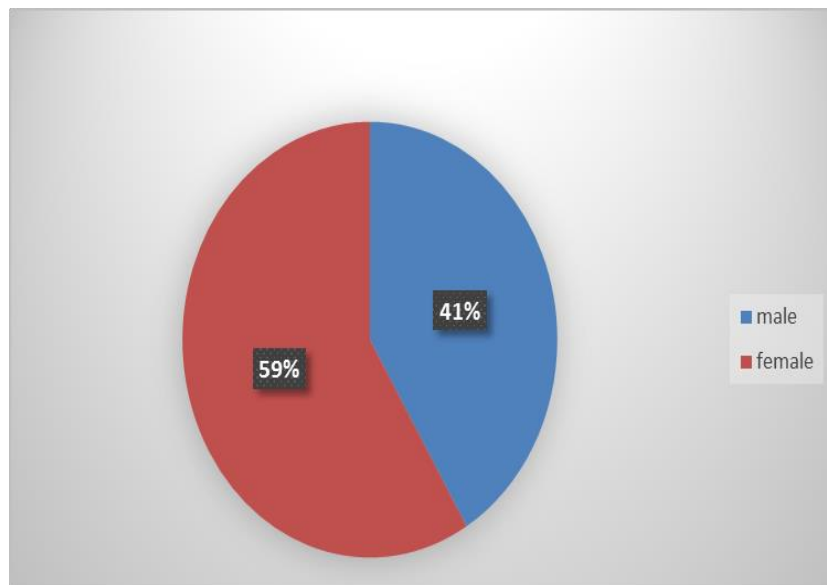
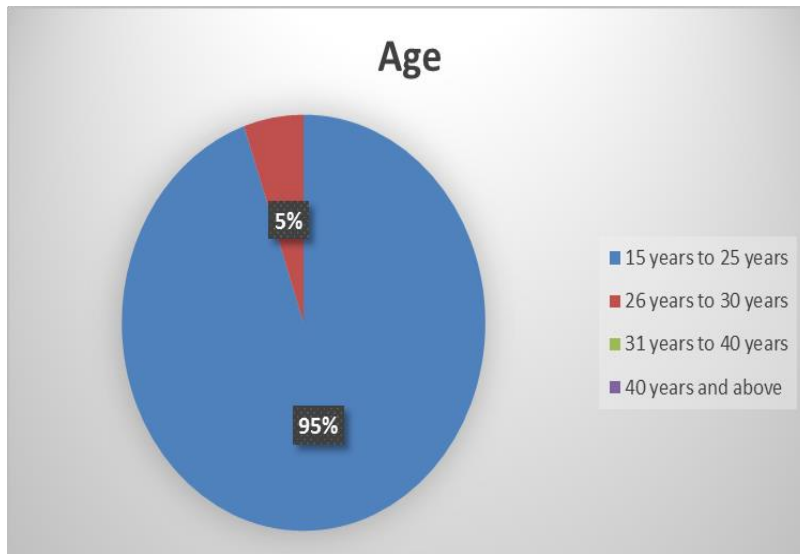


Figure 4. 1

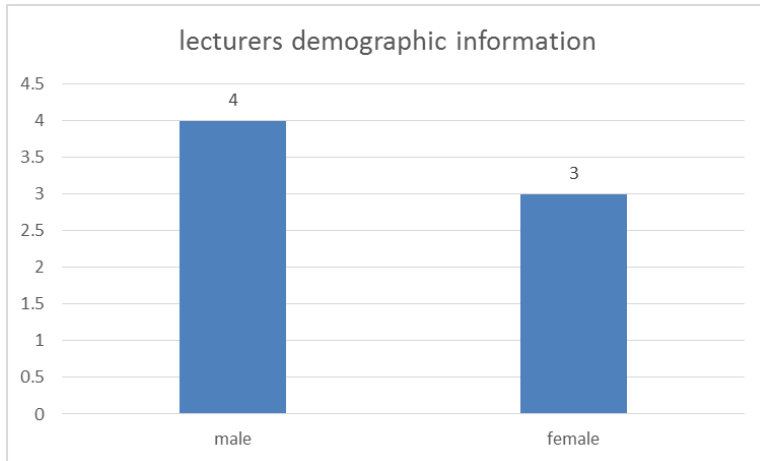
**The** distribution consisted of (55) female respondents and (39) male respondents amounting to a total sum of 94 respondents all together. Results in figure 4.1 show that majority of the students were female and a few of the students were male. Most of the respondents had ages ranging from 15years to 25years and a few ranging from 26 years to 30 years of which all were fourth years as shown in figure 4.2 below.



**Figure 4. 2**

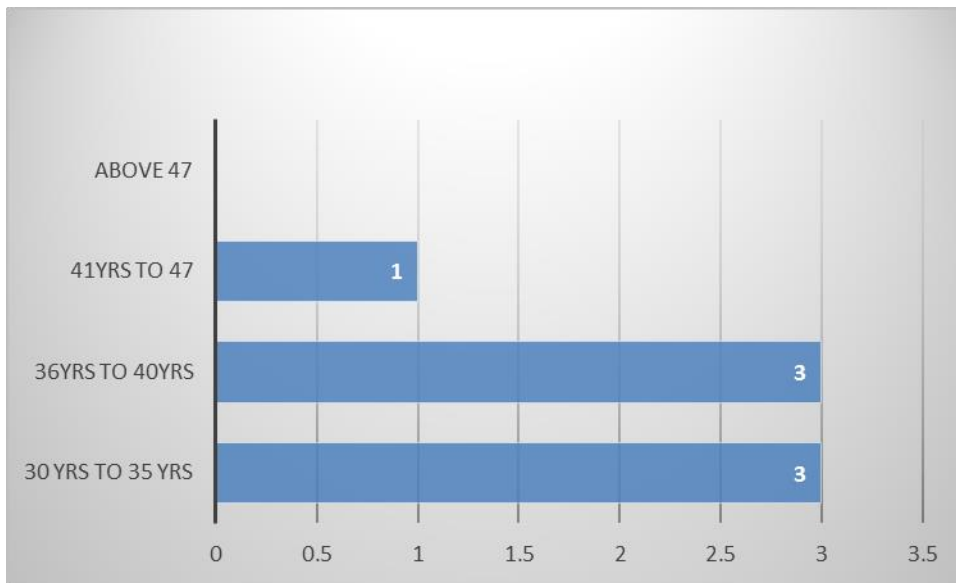
#### **DEMOGRAPHIC RESPONSE OF LECTURERS**

Furthermore, a total of (7) lecturers answered the questionnaire of which (4) were male and (3) were female. Figure 4.3 shows the data below.



**Figure 4. 3**

More so, most of the lecturers(3) fell in the a age range of 30year to 35years and (3) 36years to 40 years while one of the respondents fell in the range of 41years to 47 years as shown below.

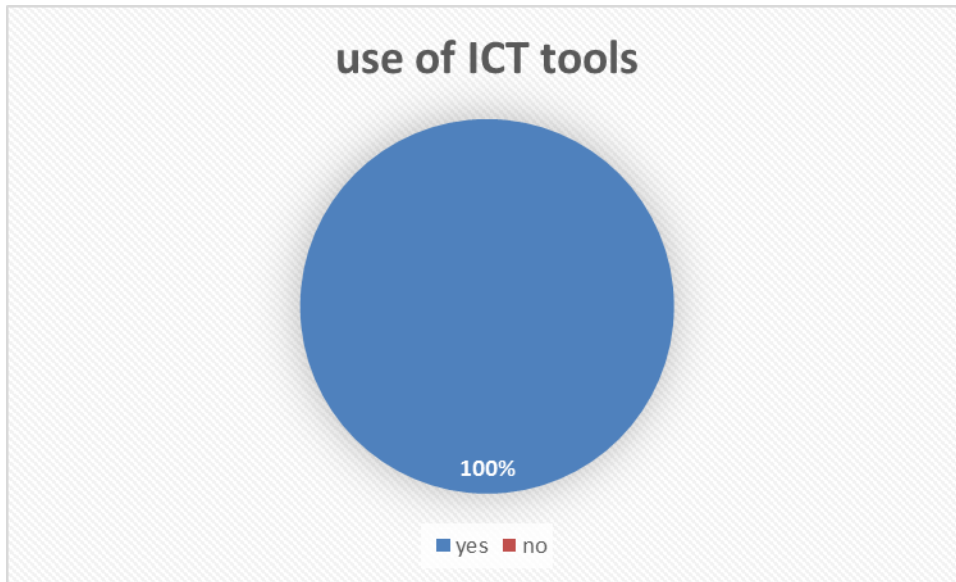


**figure 4. 4**

### **4.3 USE OF ICT IN IMPROVING LEARNING**

**When** asked if they used any ICT tools for learning 100% of the respondents agreed as shown in figure 4.5. Further, the students were asked to indicate some of the ICT tools they used besides a

smart phone, majority of them mentioned laptops, computers and photocopiers. A few others made mention of the internet, Moodle, iPad and printers.



**figure 4. 5**

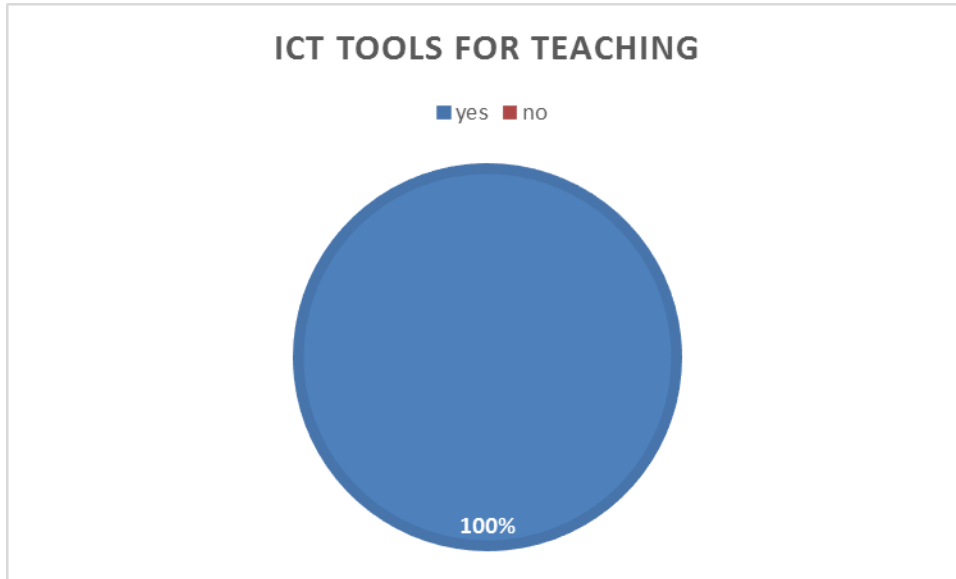
Figure 4.6 indicates 100% of the students agree that the use of computers improve the learning process at the University of Zambia.



**figure 4. 6**

Additionally, Students were asked what ICT tools are often used by lecturers, majority of the students (93) said projectors, laptops, computers, smart phones and Moodle and (1) respondent said none of the ICT tools were used by lecturers.

### 4.3 USE OF ICT IN IMPROVING TEACHING



**Figure 4. 7**

Majority 7(100%) of lecturers agreed the used ICT tools for teaching as shown above and some of the ICT tools used for teaching by the respondents were; PowerPoint presentation, projectors, computers, google drive, Moodle and laptops.

### DOES THE USE OF ICT HELP LECTURERS IMPROVE TEACHING WITH UPDATED MATERIALS?

	Frequency	percentage	Valid percentage
YES	7	58.3	100
Valid NO	0	0	0
total	7	58.3	100
missing system	5	41.7	
total	12	100	

**Table. 1 1**

The table above shows 7(100%) of the lecturers agreed that ICTs helps improve teaching with updated materials.

**ARE THERE ENOUGH ICT TOOLS PUT IN PLACE TO IMPROVE LEARNING?**

	frequency	percentage	Valid percentage
YES	6	50	85.7
Valid NO	1	8.3	14.3
total	7	58.3	100
missing system	5	41.7	
total	12	100	

**Table 2**

When asked if there were enough ICT tools put in place to improve learning at the university of Zambia 6(85.7%) of the lecturers agreed while 1(14.3%) disagreed. The results show there are enough ICT tools put in place to improve learning.

**IS THE DEPARTMENT DOING ENOUGH TO IMPROVE STUDENTS'  
UTILIZATION OF ICTs IN THE LIS PROGRAMES OFFERED?**

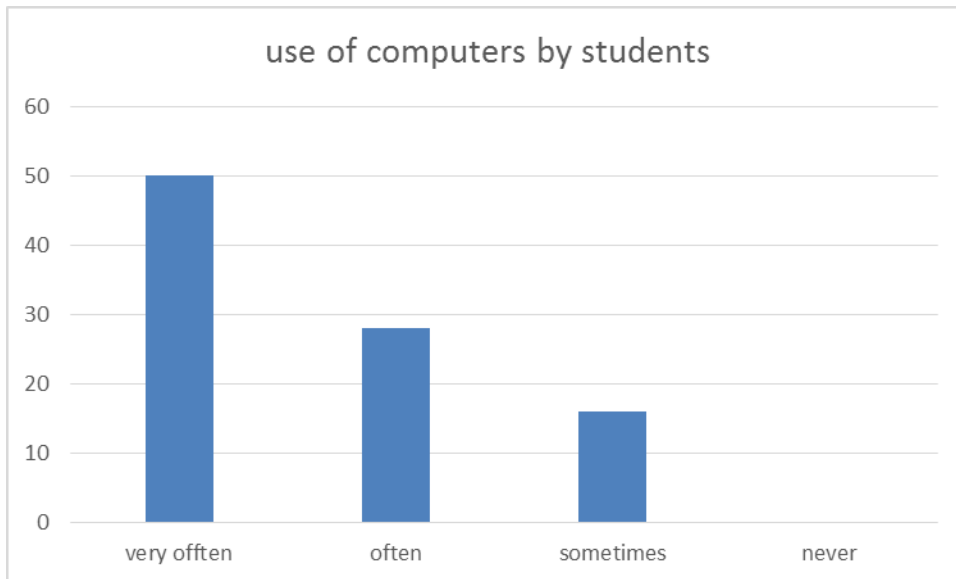
	frequency	percentage	Valid percentage
YES	7	58.3	100
Valid NO	0	0	0
total	7	58.3	100
missing system	5	41.7	
total	12	100	

**Table. 3**

Majority of the respondents agreed that the library and information department is doing enough to improve students' utilization of ICTs with a total of 7(100%) of lecturers agreeing to this.

#### 4.3 ICT ENHANCEMENT OF TEACHING AND LEARNING AMONG STUDENTS

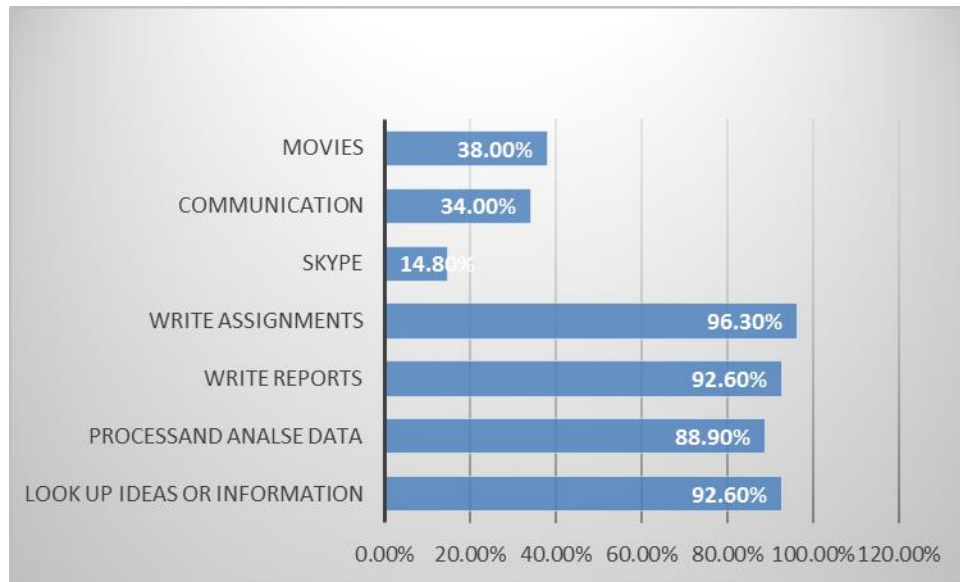
When asked In terms of ICT integration improving the quality of teaching, 90.7% of the students agreed that it did improve the quality of teaching and learning while 9.3% of the student respondents did not agree that ICT integration improved the quality of teaching and learning at the University of Zambia. Out of a total of 94 respondents, (50) very often used computer, (28) indicated they often used the computer and (16) indicated they sometimes used the computer as shown below in figure 4.7.



**Figure 4.8**

**Students were asked what they used the computer for. The responses are shown in Figure 4.9 below**

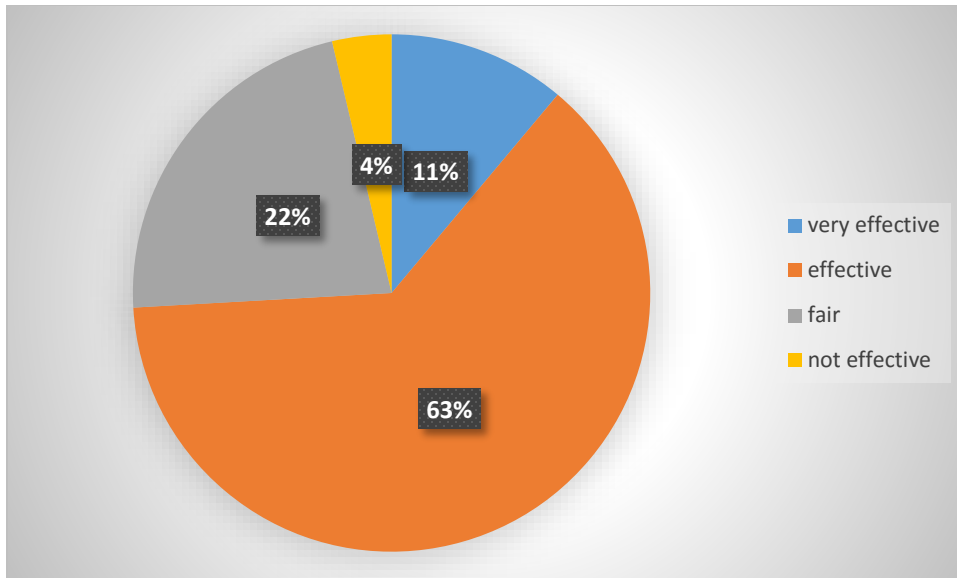




**Figure 4.9**

The study revealed 90 (96.3%) of the students used computers to write their assignments, while 87(92.6%) used it to look up ideas, information and write reports and the least of 13(14.8%) of the students used it for Skype. The results show that computer or personal computers are used mainly for educative purpose hence enhancing their learning.

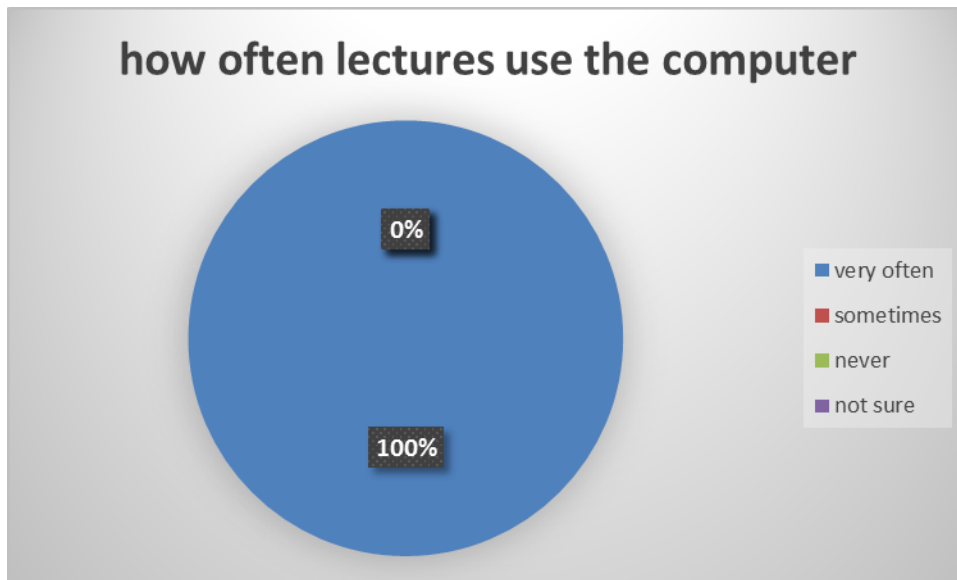
### **ICTs enhancing teaching and learning**



**Figure 4.10**

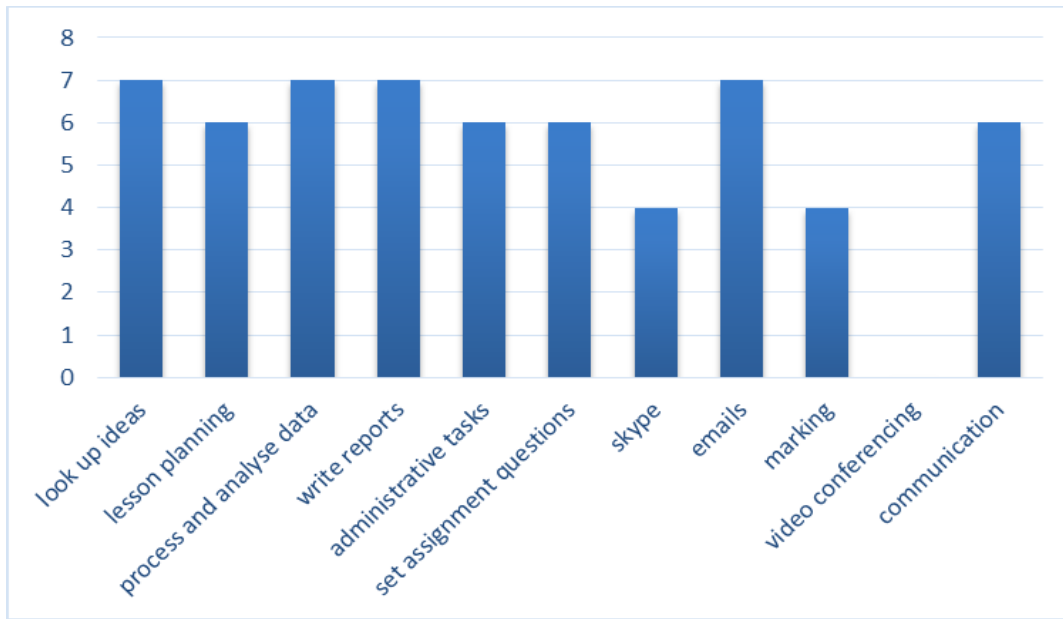
The students were asked to evaluate the use of ICT in enhancing teaching and learning. The responses are shown in figure 5.0, that 63% of the respondents evaluated it as effective, 22.2% of the students said it was fair, 11.1% said it was very effective while 3.7% evaluated the use of ICT as not effective in enhancing teaching and learning at the university of Zambia. Thus, from the results above, it can be noted that the use of ICTs in enhancing teaching and learning is effective.

#### **ICT ENHANCEMENT IN TEACHING AND LEARNING AMONG LECTURERS**



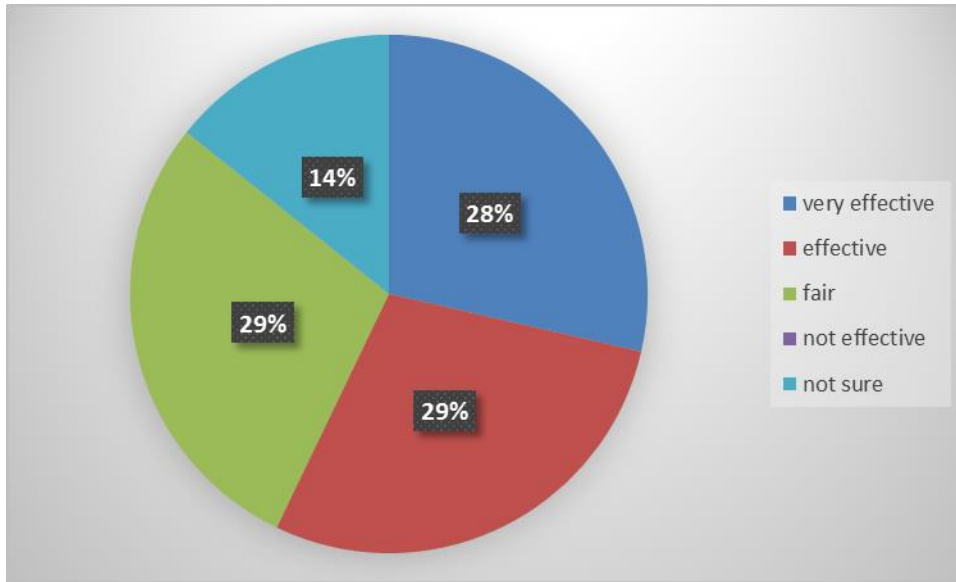
**Figure 4.11**

Lecturers were asked how often they use the computer and 100% of the respondents indicated they very often used the computer. When asked what they used them for; 7 (100 %) of the lecturers indicated they looked up ideas or in information, processed data, used it to write reports and for emails. While 85.7% of the respondents indicated they used it for lesson planning, administrative tasks, setting assignment questions and for communication. 57% of the respondents indicated they used computers for Skype and marking as shown in the figure 5.2 below. More, from the total of (7) respondents (5) lecturers agreed that the integration of ICTs improves the quality of teaching while (2) of the lecturers did not respond.



**Figure. 12**

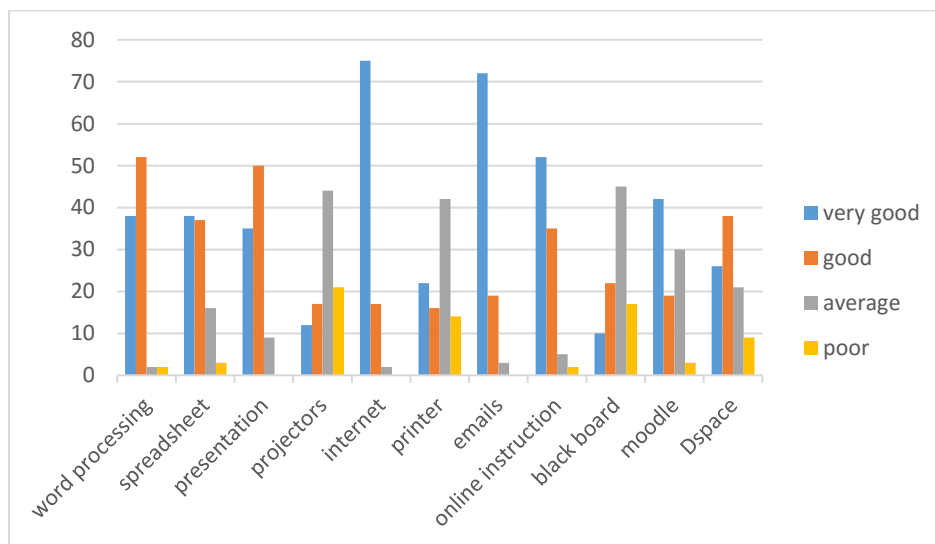
**EVALUATION OF ICT USE IN ENHANCING TEACHING AND LEARNING AMONG LECTURERS.**



**Figure 4.13**

When asked to evaluate the use of ICTs to enhance teaching and learning, 2(29%) Of the respondents indicated it was effective, 2(29%) indicated it was fair, 2(28%) indicated it was very effective and 14% reported they were not sure. Majority of the lecturers evaluated the use of ICT as effective in enhancing teaching and learning.

#### 4.4 KNOWLEDGE OF ICT USE AMONG STUDENTS

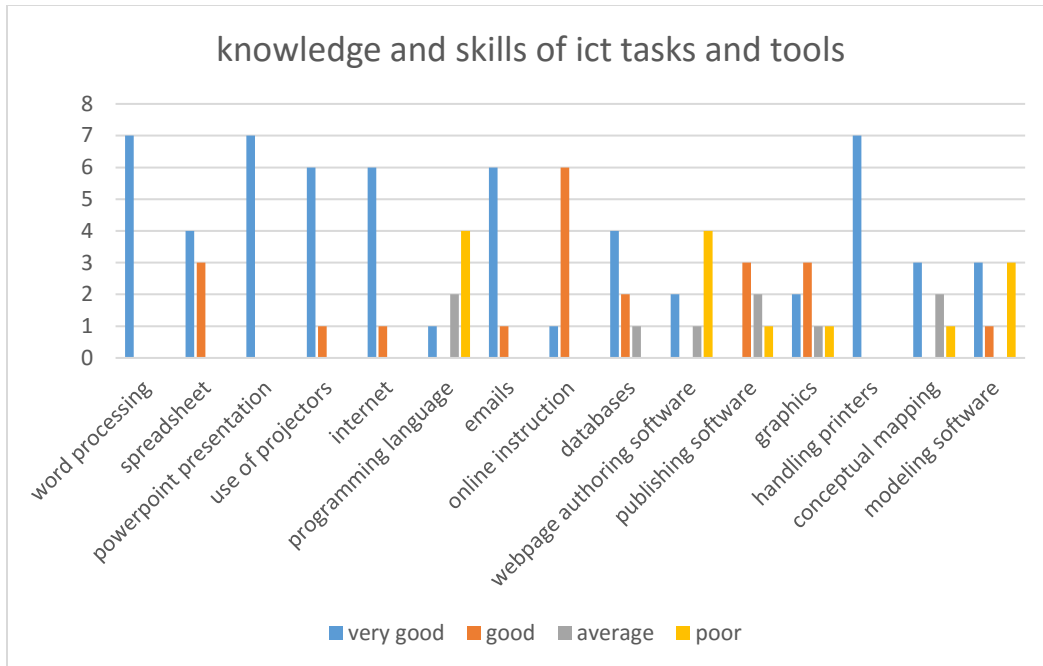


**Figure 4.14**

When asked to rate their knowledge and skills in various ICT tasks and tools, (38) students indicated they were very good with word processing, while (52) students indicated they were good, (2) indicated they were average and (2) were poor at word processing. With regards to spreadsheets (38) students rated they were very good, (37) were good, (16) were average and (3) indicated they were poor at spreadsheets. With presentation (PowerPoint) (50) students said they were good, (35) students said they were very good and (9) reported they were average in their presentation skills. With projectors the highest number of students (44) said they were average, while (21) said they were poor while a total of (29) students were in the range of good and very good in the use of projectors. The use of the internet (75) and emails (72) had the highest numbers of students who indicated that they were very good. 52 of the students indicated they were very good with online instructions, while (35) students were good and a total of 7 fell between average and poor with online instructions. Majority of (45) students indicated they were average in the use of blackboards, while (42) students indicated they were very good with Moodle, (19) indicated they were good, (30) students reported they were average and (3) said they were poor. While a majority of (38) students felt they were good with using Dspace, (26) indicated they were very good and (21) reported they were average.

## **KNOWLEDGE OF ICT USE AMONG LECTURERS**

**Lecturers were asked to rate their ICT knowledge and skill as shown below;**



**Figure 4.15**

Majority of the lecturers (100%) indicated they were very good with word processing, PowerPoint presentation and handling printers. While (85.7%) of the lectures were very good in the use of projectors, the internet and emails and (85.7) indicated they were good with online instructions. While (57.4%) were very good with spreadsheets and databases, while others (57.4%) indicated they were poor in programming language and web authorizing software. More so, (42.9%) of the lecturers indicated they were good with publishing software, graphics and spreadsheets, while others indicated they were very good with handling printers and conceptual mapping and another (42.9%) indicated they were poor with modeling software. 28.6% of the lecturers indicated they were very good with webpage authoring software and graphics, while others indicated they were average in conceptual mapping and publishing software. 14.3% of lectures indicated they very good in programming language and online instructions, while others indicated they were good with emails, use of projectors, internet and modeling language, another 14.3% indicated average with databases, web authoring and graphics and others indicated poor in conceptual mapping, graphics and publishing software.

**IS THERE ENOUGH PROFESSIONAL DEVELOPMENT PROGRAM PROVIDED FOR LECTURES?**

	frequency	percent	Valid percentage	Cumulative percentage
<i>YES</i>	1	8.3	14.3	
<i>Valid NO</i>	6	50	85.7	85.7
<i>Total</i>	7	58.3	100	100
<i>Missing system</i>	5	41.7		
<i>Total</i>	12	100		

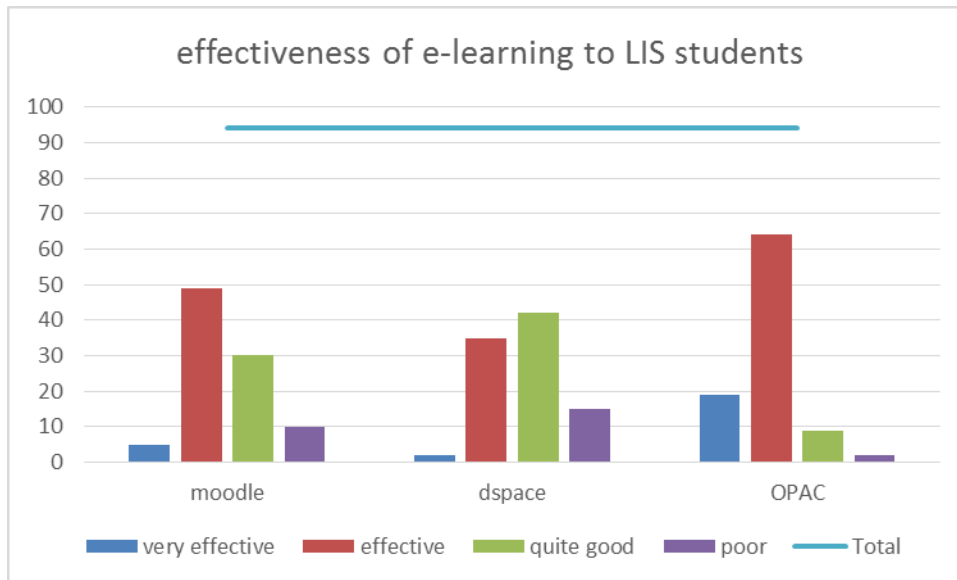
**Table. 4**

**IF YES HOW HAS IT HELPED YOUR SPECIALIZED FIELD OF TRAINING?**

However, only one (14.3%) out the (7) respondents agreed there were enough professional development programs provided for lecturers to equip them with knowledge and skills in ICT use in teaching. The lecturer indicated that training provided on Moodle and UNZA website slightly help improve administrative tasks. While 6(85.7%) of the lecturers disagreed.

**4.5 BENEFITS OF ICT USE**

Students were asked how effective the introduction of e-learning has been and figure 4.16 reveals their responses below.



**Figure 4.16**

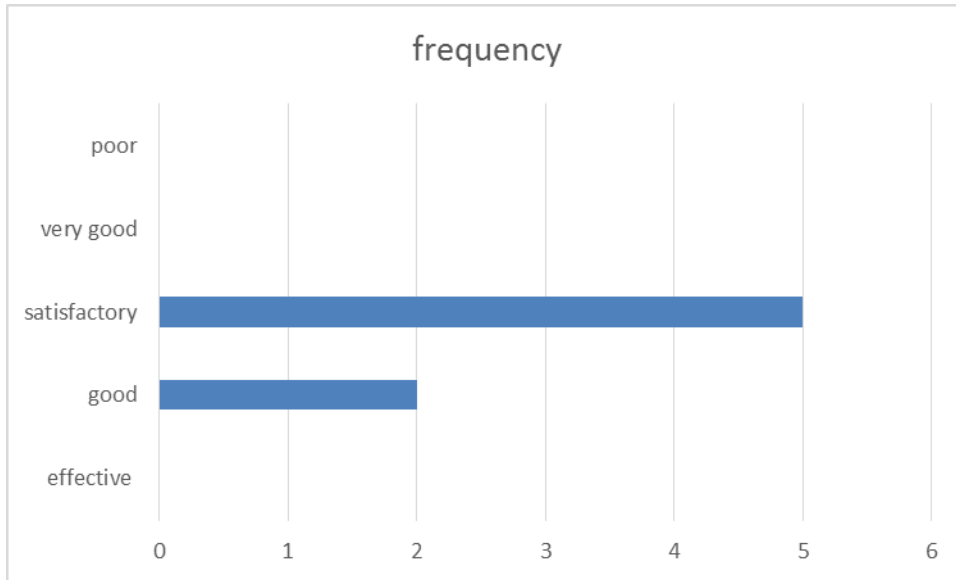
Data from **figure 4.16** revealed 49 students found Moodle effective, (30) students indicated it was quite good, (10) of the respondents said it was poor and (5) students indicated it was very effective. Majority of the students (42) indicated that dspace was quite good, other respondents (35) indicated that it was effective, while (15) students reported it was poor while 5 respondents indicated Dspace is very effective. More so, (64) students indicated online public access catalogue (OPAC) effective, while (19) students found it very effective, (9) students indicated it quite good and two (2) of the respondents reported it as poor. The results show majority of the students found OPAC very effective, a good number of the students indicated Moodle was effective while a majority of the student found Dspace quite good.

Of all the expected respondents 98.1% of the respondents agreed that the use of computers helped ease their work load.

### **BENEFITS OF ICT USE AMONG LECTURERS**

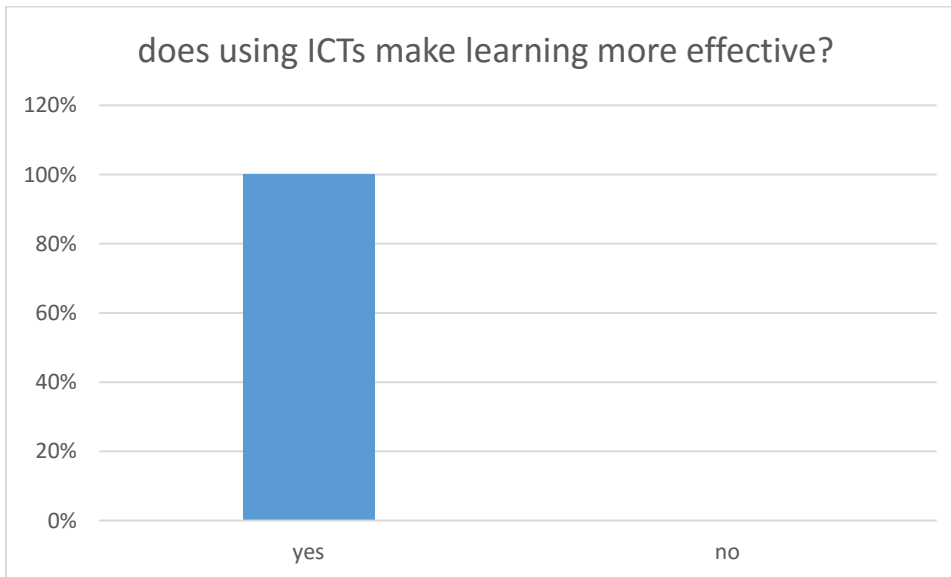
Lecturers were asked to rate the accessibility of computers at the university of Zambia. Five lecturers indicated it was satisfactory while two (2) indicated it was good as shown in the figure below;





**Figure 4.17**

Furthermore, lecturers were asked if teaching using ICTs made learning more effective and 100% of the lecturers agreed as shown below.

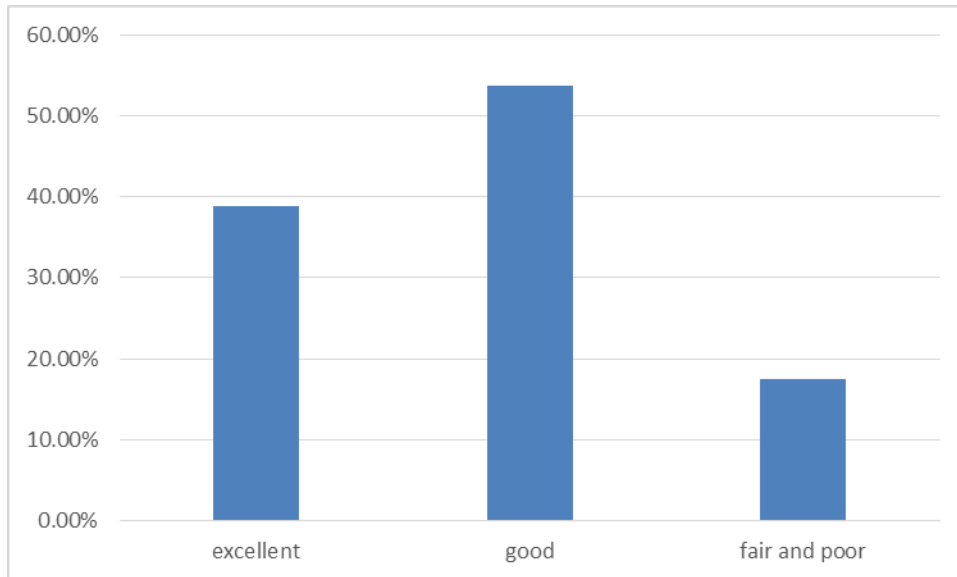


**Figure 4.18**

Lecturers also indicated how they have benefited from the use of ICTs in teaching and they indicated the following; they found it easy to prepare lessons and make delivery of lectures easy. Others found it faster, better and efficient in record keeping. More so, it has improved their

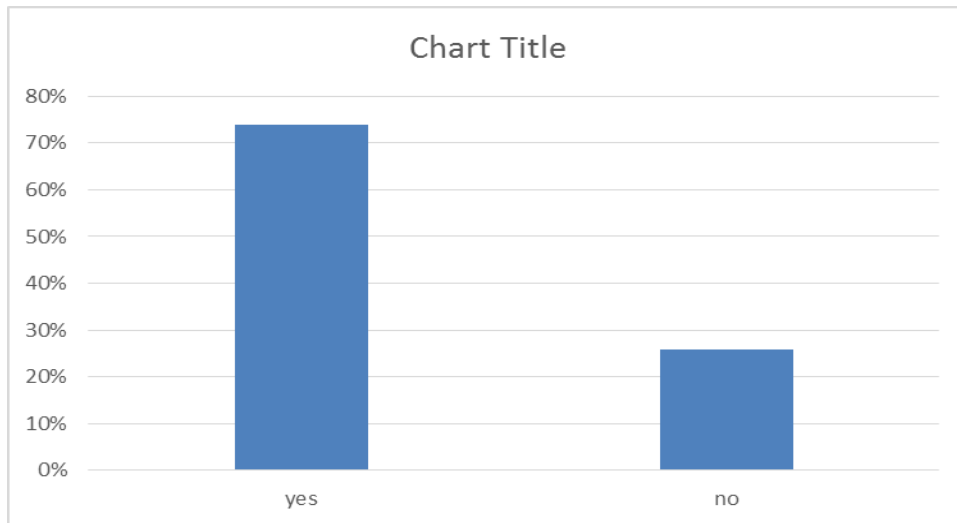
communication and the sharing of learning materials with students such that they can access course resources at any time or place via online platforms

#### 4.6 CHALLENGES OF ICT USE



**Figure 4.19**

When asked to rate their computer skills and knowledge in the learning and teaching process at the University of Zambia 53.7% said they were good and 38.9% said their skill and knowledge of ICT use was excellent. While 17.4% of the respondents said their skill and use of ICT was fair and poor as shown in figure 4.19 above.



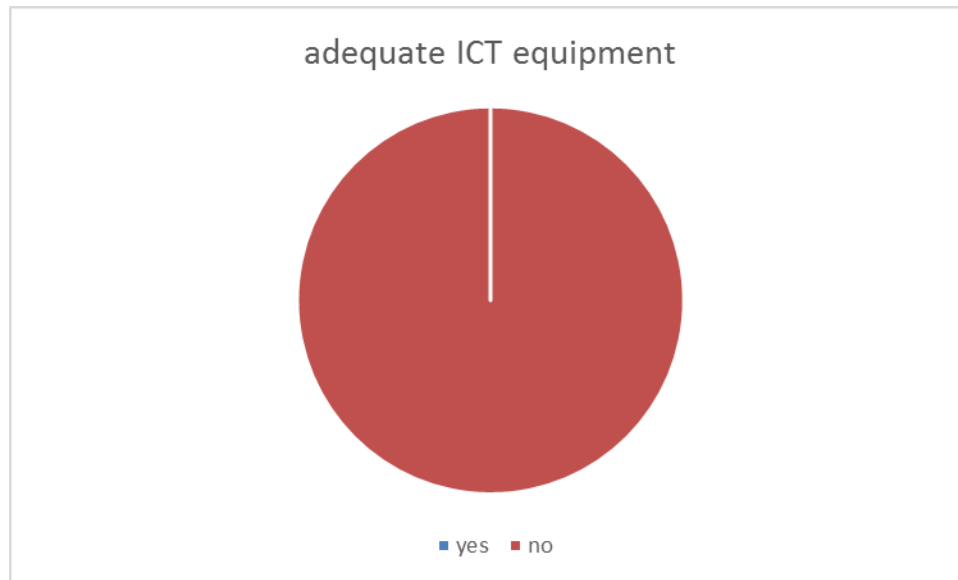
**Figure 4.2**

74% of the respondents said the school of education does not have enough ICT equipment, while 25.9% of the respondents agreed that the school of education has enough ICT equipment to help improve the teaching learning process at the University of Zambia.

Some of the challenges encounter by LIS students in the use of ICTs were; slow or poor internet connection, ICTs are old and not utilized, ICTs are outdated, computers are not enough to cater for everyone in computer labs, computer viruses and computer crush, few staff to teach how to use ICTs, lack of ICT personnel to help students get around the use of ICTs, lecturers don't use Moodle, faults with hardware and some lecturers do not use any ICT tools even if ICT is intergraded into the course hence lacking in practice on the students part.

### **CHALLENGES OF ICT USE AMONG LECTURERS**

When asked if the school of education has adequate ICT equipment to help improve teaching and learning at the university of Zambia majority (6) of the lecturers said no while (1) indicated partially



**Figure 4.2 1**

When asked some of the challenges the encounter in the use of ICTs, some lectures indicated that there was lack of maintenance of computer labs in the school of education, limited quantity of computers and resources, lack of equipment, lack of training, slow internet connectivity for effective use of computers to prepare for lessons. More so, students are reluctant in the use of ICT tools such as Moodle and email and finally one of the lecturers did not encounter any challenges.

Lecturers also indicated some of the factors that hinder them from using ICTs in teaching. Some reported that it was due to lack of skills and training, others were resistant to change while others noted there was low motivation to adopt ICTs teaching- Moodle training and Moodle usage is perceived as optional.

## **CHAPTER FIVE**

### **DISCUSSION OF FINDINGS**

#### **5.0 OVERVIEW**

The chapter looks at the findings of the research presented in chapter four. The discussions of the finding will be done by each specific objective looked at in the investigation of ICT use and its impact on the learning process among students: a case study of the university of Zambia Department of library and information science.

#### **USE OF ICT TO IMPROVING LEARNING**

100% of the respondent both students and lectures used ICT tools. Some of the tools utilized by students were laptops, computers and photocopier, while a few made mention of the internet, Moodle, printer and iPad. While lecturers indicated they mainly used computers, projector, PowerPoint, google and laptops. Students also indicated that lecturers used computers, projectors, laptops, smart phones and Moodle for teaching. More so, lecturer (100%) agreed that ICTs improved the teaching and learning process with updated materials and that 85.7% agreed there were enough ICT tools to improve learning at the University of Zambia. The main objective was to identify ICT tools put in place to improve learning at the university of Zambia, therefore the study identified laptops, computers, the internet, Moodle and projectors were some of the tools used by students and lecturers to improve teaching and learning. Thus the reveal both lectures make use of ICT tools to improve the learning and teaching process. The results are related to Fisher, Higgins, and Loveless, (2006) studies, after the MPTP project, 98% of teachers who participated in the project made effective use of ICT in the teaching and the learning process.

#### **ICT ENHANCEMENT OF TEACHING AND LEARNING**

The findings revealed 50(71.4%) of the students and 7(100%) of the lecturers often used computers. Students mainly used computers to write their assignments (96.3%), write reports (92.6%), look up ideas and information (92.6%) and 88.9% used it for processing data. While a few indicated they used computers for communication and Skype. On the other hand (100%) of lecturers indicated they used computers to look up ideas and information, process data, write reports and for emails while 85.7% used it for planning lessons, administrative tasks, setting

assignments and for communication and 57% used it for Skype and marking, furthermore, when asked to evaluate ICT enhancing learning and teaching (63%) of the students and (29) of lecturers indicated it was effective while 29% of lecturers indicated it was fair. And five (5) out seven (7) of the lecturers agreed that the use of ICTs improves the quality of teaching. The main objective was to evaluate whether the use of ICT enhances students learning, the results revealed majority of the students and lecturers often used computer to enhance their learning and teaching processes, to look up ideas and information, process data and write assignments. Lectures also found it effective to use ICT for administrative tasks, planning lessons, process data and for emails as well as writing reports. Rockman and Chessler, (2000) found in their studies that students' computer literacy improves their academic achievements and positive attitudes in learning. The research study further indicate that learners participate more actively when ICT is used in learning.

### **STUDENT'S KNOWLEDGE OF ICT USE**

According to the findings of students' knowledge and skills, majority of them were good in using the internet, emails and online instructions. Fifty (50) of them were good with word processing, power point presentation while 45 of the student were average with using projectors, printers and black boards. Consequently, majority of the students had poor knowledge with the use of projectors compared to other tasks and tools. From the lecturer's findings, 100% were confident in the use of PowerPoint presentations, word processing and handling of printers and 87% were very good with the use of projectors, the internet and emails, 87% were good in online instructions while 57.4% were poor in programming language, publishing software and conceptual mapping. The main objective was to examine how knowledgeable students and lecturers are towards the use of ICTs. The study concludes that the respondents were acquitted with use of computers and a majority had sufficient knowledge in the use of various tools and were confident in the performance of tasks.

When asked if there were any professional development programs provided for lecturers at the university of Zambia, (6) lecturers disagreed while one (1) of the respondents agreed there were professional developments to equip them with knowledge and skills in their specialized skills in ICT use in teaching on Moodle and UNZA website which improved administrative tasks. The findings reveal there are no professional development programs provided to equip lecturers with knowledge and skills in their specialized skills which is contrary to Marmwin (1998) in his study

“Facing the challenge: Technology training in libraries,” which observed that information professionals must develop knowledge or expertise in an established programme of knowledge to cultivate the technical capability and subject knowledge.

### **BENEFITS OF ICT USE**

From the findings majority of the lecturers indicated the accessibility of computers was satisfactory and this contributed to the effectiveness in the delivery of teaching and learning with ICTs. Therefore, the use of computers made it faster, efficient and easy to prepare lessons and helped in record keeping. This in line with Volman and Eck (2005) who postulated that the belief that the use of ICTs in education contributes to a more constructivists learning and an increase activity and better responsibility of students. Diaz’s study in Wales exuded that teachers made significant progress where schools rated ICTs use and its perceived impact as significant or substantial. One component of the report found out that ICT use led to increased commitments to the teaching task, enhanced enjoyment and interest in teaching, an enhanced sense of achievement in teaching.

While 98.1% of the students agreed that the use of computers helped ease their academic work load through the use of e-learning platforms like Moodle where (49) of the students reported they found it effective, 64 students indicated online public access catalogue (OPAC) effective, while (19) students found it very effective and a majority of 40 students evaluated Dspace as quite good.

### **CHALLENGES OF ICT USAGE**

This part of analysis tried to establish the challenges affecting the use of ICT in enhancing teaching and learning. Relevant questions from lectures’ and students ‘questionnaire were sought and analyzed. Lecturers were asked to indicate some of the factors hindering them in the use of ICTs in teaching. Lecturers indicated that lack of skill and lack of training (43%), resistance to change (14.3%), lack of equipment (14.3%) and low motivation to adopt to ICTs (14.3%) while (14.1) indicated nothing.

These findings show that majority of the respondents identified lack of ICT skills and lack of training as a major challenge that hinder the usage of ICTs in teaching and learning. The E-learning Nordic Study revealed that in some cases the reasons for selecting a technology are affected more by the lecturers’ skills than by professional consideration. The findings of this study confirms the same. Additionally, this result is in agreement with (Becta, 2004) study which found that although

some teachers have good ICT skills in terms of their own personal use, they are unable to transfer those skills to using ICT in classrooms.

When asked what some of the challenges students and lecturers have encountered in the use of ICTs, they indicated slow internet, inadequate computers to cater for everyone, lack of training and skills, low motivation and resistance to change. Additionally students also noted, computers were old, outdated and not utilized and ICT personnel's were few in number.

## **5.1 CONCLUSION**

This study investigated the impact of ICT (computers) use among library and information science students in teaching and learning at the University of Zambia. The linking of computers to education across the world is known to many people because it is believed that ICT has a crucial impact on teaching and learning. Therefore Educational Institutions are witnessing a paradigm shift brought about by the use of ICT that others have even started seeing ICT as a requisite tool in the teaching and learning process. As a results the research findings revealed that students, are continually exposed to the capabilities of ICT and were mainly acquitted and knowledgeable in the use of ICTs. From the lecturers response we can conclude there is a mainstream opinion that sees using ICT in teaching as favoring several processes related to teaching and learning, the study revealed some tools mainly used; computer, internet, laptops and projectors, which played a beneficial role in improve learning at the University of Zambia. Consequently, in as much as the use of computers are beneficial, there were some challenges faced such as having old and outdated computers, inadequate number of computers to cater for everyone, slow internet connect which slows administrative tasks, preparations of lessons and process of data in a timely manner among other challenges impacted negatively on the use of ICTs in teaching and learning.

## **5.2 RECOMMENDATION**

The following are some of the recommendations based on the findings from the study and in line with the main objectives of the research study.

To identify the ICT tools put in place to improve learning at the University of Zambia.

- ❖ More ICT tools used be used and not just be limited to PowerPoint presentations, computers and projectors. More so, computers be adequate enough to cater for all students to make learning more practical.

To investigate the challenges of ICT in teaching and learning at the university of Zambia.



- ❖ The university should keep up to date with technological changes and ensure ICT are utilized and more professional development programs should be made available to lecturers as well as more IT personnel to help student with any challenged in courses with ICT integration.

To examine how knowledgeable students are towards the use of ICTs.

- ❖ The school of education needs to find more ways to involve students in the use of e-learning platforms like Moodle, Dspace and OPAC, most of the students were not efficient.

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## **APPENDIX 1: STUDENT QUESTIONNAIRE**

**THE UNIVERSITY OF ZAMBIA**

**SCHOOL OF EDUCATION**

**DEPARTMENT OF LIBRARY AND INFORMATION SCIENCE**

**LIS 4014 RESEARCH PROPOSAL**

**Questionnaire for UNZA Students**

**TOPIC:**

**AN INVESTIGATION OF ICT USE AND ITS IMPACT ON THE LEARNING PROCESS  
AMONG LIS STUDENTS**

Dear Respondent,

I am a fourth year student in the School of Education conducting a research on the mentioned topic above. You were randomly selected to participate in this research as a research respondent. Be advised that the research is purely an academic exercise and the information you are requested to give will only be used for academic purposes and be treated with maximum confidentiality.

**INSTRUCTIONS:**

1. Do not indicate your name, computer number or anything that can identify you
2. Only one response is required for questions that have options
3. Tick your answer that expresses your view as shown
4. For open ended questions write responses in the spaces provided

**SECTION A: BACKGROUND INFORMATION**

**For  
Official  
Use**

1. What is your sex?

1) Male

2) Female

2. Age

1. 15yrs to 25yrs

2. 26yrs to 36yrs

3. 37yrs to 47yrs

4. Above 47yrs

3. What is your program of study? .....

.....

4. What is your year of study?

1) 1<sup>st</sup> Year

2) 2<sup>nd</sup> Year

3) 3<sup>rd</sup> Year

4) 4<sup>th</sup> Year

**SECTION B: THE USE OF ICT IN IMPROVING LEARNING**

5. Do you use any ICT tools for learning?

a) Yes

b) No

6. If the answer is 'yes' above, can you name some of the ICT tools you use besides a smart phone?

.....  
.....

7. Does the use of ICT/computer improve your learning process at the University of Zambia?

a) Yes

b) No

8. Generally, what ICT tools are often used by lecturers in your learning and teaching process at the University of Zambia?

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**SECTION C: ICT ENHANCEMENT OF TEACHING AND LEARNING**

9. Does the integration of ICTs improve the quality of teaching and learning at the University of Zambia?

a) Yes

b) No

10. How often do you use the computer/ICT?

a) very often

b) Not sure

c) Sometimes

d) never

11. What do you use the computer/ICT for?

a) Look up ideas or information

b) Process and analyze data

c) Write reports

d) Write assignments

e) Skype

f) Communication

g) movies

12. How do you evaluate the use of ICT enhancing teaching and learning at the University of Zambia?

a) Very effective

- b) Effective
- c) Fair
- d) Not effective

**SECTION D: STUDENT’S KNOWLEDGE OF ICT USE**

13. Does the LIS department have adequate courses with ICT components integrated in them at the University of Zambia?

- a) Yes
- b) No

14. How would you rate your knowledge and skills in various ICT task and tools?

Very good	Good	average	Poor
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- |                        |     |     |     |     |
|------------------------|-----|-----|-----|-----|
| a) Word processing     | [ ] | [ ] | [ ] | [ ] |
| b) Spreadsheets        | [ ] | [ ] | [ ] | [ ] |
| c) Presentation        | [ ] | [ ] | [ ] | [ ] |
| d) Projectors          | [ ] | [ ] | [ ] | [ ] |
| e) printer             | [ ] | [ ] | [ ] | [ ] |
| f) Internet            | [ ] | [ ] | [ ] | [ ] |
| g) Emails              | [ ] | [ ] | [ ] | [ ] |
| h) Online instructions | [ ] | [ ] | [ ] | [ ] |
| i) Black board         | [ ] | [ ] | [ ] | [ ] |



- a) Excellent
- b) Good
- c) Fair
- d) Poor

19. Does the school of education have enough ICT equipment to help improve the teaching and learning process at UNZA?

- a) Yes
- b) No

20. What are some of the challenges you have encountered in the use of ICTs as a student at the University of Zambia?

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.....

.....

Thank you for participating in this survey!!

## **APPENDIX 2: LECTUERER QUESTIONNAIR**

**Identification Number .....**



**THE UNIVERSITY OF ZAMBIA**

**SCHOOL OF EDUCATION**

**DEPARTMENT OF LIBRARY AND INFORMATION STUDIES**

**LIS 4014 (Research in Development Information Systems)**

### **Questionnaire**

**Dear Sir/Madam,**

I am a University of Zambia undergraduate student in the School of Education under the Department of Library and Information Studies. I am studying Library and Information studies and conducting a research for the fourth year course Research in Development Information Systems.

You are part of the selected sample from the total staff population of the University of Zambia Department of Library and Information Science and I am requesting for your assistance by completing this questionnaire. We kindly ask for your cooperation by answering this interview guide truthfully and honestly. Please be assured that the information you are to give us will be treated with utmost confidentiality and the research is purely for academic purposes. For this reason, you are not to write your name but only your job title.

**Research Title/Topic: AN INVESTIGATION OF ICT USE AND ITS IMPACT ON THE LEARNING PROCESS AMONG LIS STUDENTS: A CASE STUDY OF THE UNIVERSITY OF ZAMBIA DEPARTMENT OF LIBRARY AND INFORMATION SCIENCE**

I sincerely thank you in anticipation

Name of Institution.....

Job title of the respondent.....

**SECTION A: BACKGROUND INFORMATION**

1. What is your sex/?

5) Male

6) Female

2. What is your Age?

5. 30yrs to 35years

6. 36yrs to 40years

7. 41yrs to 47years

8. Above 47years

**SECTION B: THE USE OF ICT IN IMPROVING TEACHING**

3. Do you use any ICT tools for teaching?

a) Yes

b) No

4. How long have you being using ICTs in teaching?

a) 5- 10 years

b) 11-20 year

c) Above 20 years

5. If the answer is 'Yes' in question three (3), can you name some of the ICT tools you use for teaching?

.....  
.....

6. Does the use of ICT help lecturers improve teaching with more updated materials?

a) Yes

b) No

7. Are there enough ICT tools that have been put in place to improve learning at the University of Zambia?

a) Yes

b) No

8. Do you think you are doing enough as a Department to improve students' utilization of ICTs in the LIS Programs offered at the University of Zambia?

a) Yes

b) No

**SECTION C: ICT ENHANCEMENT OF TEACHING AND LEARNING**

9. Does the integration of ICTs improve the quality of teaching at the University of Zambia?

a) strongly agree

b) Agree

c) Disagree

d) Strongly disagree

10. How often do you use the computer?

- a) Very often
- b) Sometimes
- c) Never
- d) Not sure

11. What do you use the computer for? (select as many as apply)

- a) Look up ideas or information
- b) Lesson planning
- c) Process and analyze data
- d) Write reports
- e) Administrative tasks
- f) set assignments questions
- g) Skype
- h) Email
- i) Marking
- j) Video conferencing
- k) communication

12. How would you evaluate the use of ICT enhancing teaching and learning at the University of Zambia?

- a) Very effective
- b) Effective
- c) Fair
- d) Not effective

**SECTION D: BENEFITS OF ICT USAGE**

13. How would you rate the accessibility of computers among lecturers at the University of Zambia?

- a) Excellent
-



- b) Good
- c) Satisfactory
- d) Very poor
- e) poor

14. Do you think teaching using ICT makes learning more effective?

- a) Yes`
- b) No

15. Do you find it easier to teach using ICT?

- a) Yes
- b) No

16. How have you benefited from the use of ICTs in teaching?

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**SECTION E: KNOWLEDGE OF ICT USE**

17. How would you rate your knowledge and skills in various ICT tasks and tools

	Very good	Good	average	poor
Word processing				
Databases				
Spreadsheets				
Graphics				

Handling Printers				
Conceptual mapping				
Internet				
Programming language				
Modeling software				
Use of Projectors				
Online instructions				
PowerPoint presentation				
Email				
Publishing software				
Webpage authoring software				

18. Is there enough training and professional development programs provided for lecturers to equip them with knowledge and skills in ICT use in teaching?

a) Yes

b) No

19. If the answer to the above question is ‘yes’ how has it helped in your specialized field of training and teaching?

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.....

**SECTION F: CHALLENGES OF ICT USAGE**

20. Does the school of education have adequate ICT equipment to help improve the teaching and learning process at UNZA?

a) Yes

b) No

21. What are some of the challenges you have encounter in the use of ICTs as a lecturer at the University of Zambia?

.....  
.....  
.....  
.....

22. What factors if any do you think hinder lecturers in the use of ICTs in teaching?

.....  
.....  
.....

Thank you for participating in this survey!!